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List of the Chinese Lighthouses

CHINA.

IMPERIAL MARITIME CUSTOMS.

III.—MISCELLANEOUS SERIES: No. 6.

LIST OF THE CHINESE LIGHTHOUSES, LIGHT-VESSELS, BUOYS, AND BEACONS

FOR

1886.

(Corrected to 1st December 1885.)

FOURTEENTH ISSUE

PUBLISHED BY ORDER OF
The Inspector General of Customs.

SHANGHAI:
PUBLISHED AT THE STATISTICAL DEPARTMENT OF THE INSPECTORATE GENERAL OF CUSTOMS,
AND SOLD BY
KELLY & WALSH, LIMITED: SHANGHAI, YOKOHAMA, AND HONGKONG.
LONDON: P. S. KING & SON, CANADA BUILDING, KING STREET, WESTMINSTER, S.W.

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ABBREVIATIONS AND EXPLANATIONS.

LIGHTS.

F.	Fixed; only a fixed or steady light being visible.
F. & Fl.	Fixed and Flashing; a fixed light being always visible, which is intensified by flashes at the intervals stated.
Rev.	Revolving; the light gradually increases to full effect and then gradually decreases to total eclipse at the intervals given, which are from centre to centre of the maximum brilliancy.
Occ.	Occulting; when, for the periods stated, a fixed or steady light is shown, followed by a more or less sudden eclipse.

ILLUMINATING APPARATUS.

C.	Catoptric, or by metallic reflectors.
D.	Dioptric, or by lenses and prisms.
Ord.	Order, or class of apparatus, numbered from the first (or most powerful) to the sixth order.

The bearings are magnetic, and are given from seaward.

The given distances, from which the lights should be visible in clear weather, are calculated for an observer at a height of 15 feet above the sea; the elevation of the lights being in all cases taken as above high water.

In several cases, however, when the light is not powerful enough to carry to the distance calculated from its height, a reduced range has been given.

The coloured lights are specially noted in *italics* in the column for remarks, all others being white.

The lights are exhibited from sunset to sunrise.

Longitude is given in degrees, minutes, and seconds east of Greenwich. The miles given are nautical miles, or minutes of latitude. The positions given are only approximate ones.

The light-vessels and lighthouses are provided with both Codes of Signals, but it is advisable to use the Commercial Code.

Banks of rivers are spoken of geographically, *i.e.*, as *right* or *left* to a person facing *down* the stream.

⁂ *Should Pilots or Commanding Officers of vessels detect or suspect that any movable mark has changed from its latest advertised position, they are requested to report such change without delay to the Harbour Master of the district concerned.*

DESCRIPTION OF THE LIMITS OF CUSTOMS DISTRICTS.

The Pakhoi Customs District includes the coast line of China from the Tungking frontier to Waichow (Guiechow) Island.

The Kiungchow (Hoihow) Customs District includes the Hainan coast, and from Waichow (Guiechow) Island to Hai-ling-shan.

The Canton Customs District extends (for matters affecting the Marine Department) from Hai-ling-shan, 111° 45′ E. longitude, to 114° E. longitude.

The Swatow Customs District includes that part of the coast which is situated between Mirs Point and the Lamocks.

The Amoy Customs District extends from the Lamocks north to Chinchew, inclusive.

The Taiwan (Takow) Customs District comprises the south and southern half of the west coast of Formosa.

The Tamsui Customs District comprises the north and northern half of the west coast of Formosa.

The Foochow Customs District extends from Chinchew north to Namkwan.

The Wênchow Customs District includes the coast from Namkwan to T'aichow.

The Ningpo Customs District extends from T'aichow north to Hangchow Bay.

The Shanghai Customs District extends from Hangchow Bay along the coast as far as the old mouth of the Yellow River, latitude 34° N., and up the Yangtze to the Langshan Crossing.

The Chinkiang Customs District comprises the Yangtze from the Langshan Crossing to Nanking.

The Wuhu Customs District includes the river from Nanking to Nganking.

The Kiukiang Customs District comprises the river from Nganking to the gorge west of Kiukiang.

The Hankow Customs District extends from the gorge west of Kiukiang to Yochow, at the mouth of the Tungt'ing Lake.

The Ichang Customs District extends from the Tungt'ing Lake to the gorge above Ichang.

The Chefoo Customs District includes the coast line from the old mouth of the Yellow River to the Ta-tsin-ho.

The Tientsin Customs District extends from the Ta-tsin-ho to the Shan-hai-kwan.

The Newchwang Customs District extends from the Shan-hai-kwan to Newchwang, and from Newchwang south to Ta-lien-wan.

⁂ *The Limits of the Customs Districts are shown approximately on the Charts at the beginning of this volume by broken lines cutting the Coast or the Yangtze River.*

SYSTEM OF COLOURING BUOYS AND BEACONS IN CHINESE WATERS.

BUOYS.

No.	Colour of Buoy.	Directions and Explanations.
1	Red	Entering the channel from seaward, *red* buoys will be found on the *starboard* side of the channel, and must be left on the *starboard* hand by vessels passing in.
2	Black	Entering the channel from seaward, *black* buoys will be found on the *port* side of the channel, and must be left on the *port* hand by vessels passing in.
3	Red and black horizontal bands.	Buoys painted in *red* and *black horizontal bands* will be found in the fairway, and should be passed close-to.
4	Red and black vertical stripes.	Buoys painted in *red* and *black vertical stripes* will be found on the ends of spits, and the outer and inner extremes of banks, shoals, or extensive reefs, where there is a navigable channel on either side of such spit, bank, shoal, or reef. Vessels should never attempt to pass between a buoy thus painted and the danger which it marks.
5	Red and black chequers	Buoys painted in *red* and *black chequers* will be used to mark rocks in the open sea, also to mark obstructions of small extent having channels on either side of them. When used for the latter purpose they will be placed to seaward of the danger. Vessels should never attempt to pass between a buoy thus painted and the danger which it marks.
6	Red and white chequers	When *two chequered buoys* of these colours are used to mark an obstruction, the *red* and *white* one is to mark the *starboard* side of the channel, and must be left on the *starboard* hand by vessels passing in; and the *black* and *white* one is to mark the *port* side of the channel, and must be left on the *port* hand by vessels passing in.
7	Black and white chequers	
8	Wreck buoys	Wrecks will in all cases be marked by *green* buoys, having the word WRECK painted on them in *white* letters, and when a wreck lies in the open sea or in a position where there is a navigable channel with plenty of room on either side of it, the buoy will carry no other distinguishing mark, and will in every such case be placed to seaward of the wreck. Wreck buoys marked with an *even* number must be left on the *starboard* hand by vessels entering from the sea. Wreck buoys marked with an *odd* number must be left on the *port* hand by vessels entering from the sea. The numbers on wreck buoys will be painted in *white*, and placed above the word WRECK.

Note.—All other distinguishing marks to buoys will be in addition to the foregoing, and where such are employed, a particular description of the same will in each case be given in the published List.

Each buoy will have an iron plate fastened on its outside, in some convenient place above the water-line, with the name of its district and station as given in the published List stamped thereon in English and Chinese, to insure its identification if found adrift.

BEACONS.

No.	Colour of Beacon.	Directions and Explanations.
1	Red	Entering the channel from seaward, *red* beacons will be found on the *starboard* side of the channel, and must be left on the *starboard* hand by vessels passing in.
2	Black	Entering the channel from seaward, *black* beacons will be found on the *port* side of the channel, and must be left on the *port* hand by vessels passing in.
3	Red and black vertical stripes.	Beacons painted in *red* and *black vertical stripes* will be used to mark spits and the outer and inner extremities of banks, shoals, or extensive reefs, where there is a navigable channel on either side of such spit, bank, shoal, or reef.
4	Red and black chequers	Beacons painted in *red* and *black chequers* will be used to mark rocks in the open sea, also to mark rocks of small extent having channels on either side of them.
5	Red and white chequers	When two *chequered beacons* of these colours are used to mark a rock or reef, the *red* and *white* one is to mark the *starboard* side of the channel, and must be left on the *starboard* hand by vessels passing in; and the *black* and *white* one is to mark the *port* side of the channel, and must be left on the *port* hand by vessels passing in.
6	Black and white chequers	
		Note.—It is to be understood that the above rules for painting beacons apply in each case to the body of the structure. When a beacon which is painted a single colour, either black or red, is surmounted by a distinguishing mark, such mark may be painted the same colour as the body of the beacon or with that colour and white combined, or white alone. When the body of a beacon is painted in two colours, the same colours only may be used to paint the mark by which it is surmounted. Whenever a distinguishing mark is used, a particular description of it will be given in the published List.
	Various	Beacons on shore, to enable bearings to be taken or to give lines of direction for crossing bars or entering rivers, harbours, etc., will be painted so as to make them as conspicuous as possible. Red, black, and white will be the only colours used, and a particular description of such marks will be given in the published List.

LIGHTS.

No.	District.	Name of Light.	Location.	Latitude N.	Longitude E.	Fixed, Fixed & Flashing, Revolving, Occulting.	Intervals between the Flashes.	Miles seen in clear Weather.
1, 2	Canton	Dutch Folly North Beacons.	On rocks near Dutch Folly Island, north side of the channel.	....	....	F.	....	2
3	do.	Dutch Folly South Beacon.	On rocks near Dutch Folly Island, south side of the channel.	....	....	F.	....	1
4, 5	do.	Taishek Barrier Beacons.	On the north side of the Barrier Channel, Blenheim Passage.	....	....	F.	....	1
6	do.	Taimei Beacon	On the south-east side of the sandspit off 49th Point, Marines Island, Blenheim Passage.	....	....	F.	....	1
7	Swatow	Breaker Point	On the point	22° 56′ 30″	116° 28′ 10″	Occ.	8 seconds light and 2 seconds eclipse.	19
8	do.	Cape of Good Hope	On the cape	23° 14′ 35″	116° 48′ 31″	F. & Occ.	....	15 white, 8 red.
9	do.	Sugar Loaf	On the eastern end of the summit of island.	23° 19′ 54″	116° 45′ 32″	F. & Fl.	½ minute	8
10	do.	Lamocks	Summit of High Island	23° 14′ 50″	117° 17′ 33″	F.	....	22
11	do.	do.	Southern slope of High Island	....	....	F.	....	7
12	Amoy	Chapel Island	Summit of island	24° 10′ 18″	118° 13′ 30″	F. & Fl.	½ minute	22
13	do.	Tsingseu Island	On the northern slope of the island	24° 22′ 8″	118° 7′ 11″	F.	....	15 white, 8 red.
14	do.	Taitan Island	On the island, near the northern entrance to Amoy Harbour.	24° 23′ 30″	118° 9′ 48″	F.	....	10

LIGHTS.

Colour, or any Peculiarity of Light-tower.	Height in Feet of Centre of Light above HW	Height in Feet of Building from Base to Vane.	Year lighted.	Character and Order of Illuminating Apparatus.	Remarks.	No.
Round granite beacons, painted red, and surmounted by a lantern.	15	26	1859	Unclassed ...	Two *red* lights on the northern side of the channel. The same as Beacons Nos. 1, 2.	1, 2
Round, stone and brick beacon, painted black, and surmounted by a lantern.	10	22	1859	do. ...	A *green* light on the southern side of the channel. The same as Beacon No. 3.	3
Spar beacons, painted red, white, and red, and surmounted by a circular frame.	24	46	1872	do. ...	Two *red* lights to mark the deepest water over the barrier. The same as Beacons Nos. 4–6.	4, 5
Spar beacon, painted black, white, and black, and surmounted by a square frame.	21	42	1872	do. ...	A *white* light to mark the south-east edge of sandspit. The same as Beacon No. 7.	6
Round, black and white horizontal bands.	152½	120	1880	D. 1st Order	*White* from S. 55° W. round by W. to N. 53° E., and *red* inshore of both these bearings as far as the land. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 10 seconds between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	7
Round, white	171	22	1880	D. 4th Order	*Fixed red* from S. 32° E. to S. 10° E.; *fixed white*, eclipsed for about 3 seconds every minute, from S. 10° E. round by S. and W. to N. 8½° E.; and *fixed red*, eclipsed for about 3 seconds every minute, from N. 8½° E. till it is shut in by Ma-urh Point. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 1 minute between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 15 minutes.	8
Round, red	200	21½	1880	D. 6th Order	*Fixed white* varied by *red* flashes at ½-minute intervals; visible all round.	9
Round, black...........	241	54	1874	D. 1st Order	Visible all round. The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 3 guns with an interval of 2 minutes between the first and second and the second and third, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 12 minutes.	10
No tower	55	18	1874	D. 4th Order condensing.	Shows a *red* light only, between N. 34½° E. and N. 50½° E., covering the White and Boat Rocks. Exhibited from a window in a building painted white.	11
Round, black	227	63	1871	D. 1st Order	Visible all round. The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 3 minutes between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	12
Octagonal, red and white vertical stripes.	130	33	1875	D. 4th Order	*Red* from N. 1° E. to N. 57° W.; *white* from N. 57° W. round by W. and S. to S. 50° E.; and *red* from S. 50° E. to S. 89° E. The lightkeepers' dwellings and boundary wall are painted white.	13
Octagonal, white	300	16	1863	Four Argand lamps with silver reflectors.	Visible only from W. round by N. to S.E.........................	14

LIGHTS—*Continued.*

No.	District.	Name of Light.	Location.	Latitude N.	Longitude E.	Fixed, Fixed & Flashing, Revolving, Occulting.	Intervals between the Flashes.	Miles seen in clear Weather.
15	Amoy.........	Dodd Island	Summit of island.....................	24° 26′ 16″	118° 29′ 4″	Occ.	26 secs. light and 4 seconds eclipse.	18
16	Takow........	South Cape..............	About 550 yards north from high water mark at the extreme south point of the South Cape, Formosa.	21° 55′ 0″	120° 50′ 38″	F.	....	20
17	do.	Saracen Head	Front of flagstaff near the summit of Saracen Head, at the entrance to Takow Harbour.	22° 36′ 14″	120° 16′ 0″	F.	....	10
18	do.	Fort Zelandia...........	About 100 yards to seaward and directly in front of the tree on the top of the mound in Fort Zelandia.	23° 0′ 20″	120° 10′ 0″	F.	....	10
19	do.	Fisher Island	S.W. extremity of island...........	23° 32′ 53″	119° 28′ 5″	F.	....	15
20	Foochow	Ockseu	Summit of High Island	24° 59′ 0″	119° 28′ 0″	Rev.	1 minute	24
21	do.	Turnabout...............	Summit of island	25° 26′ 0″	119° 58′ 42″	F.	....	23

LIGHTS—*Continued.*

Colour, or any Peculiarity of Light-tower.	Height in Feet of Centre of Light above HW	Height in Feet of Building from Base to Vane.	Year lighted.	Character and Order of Illuminating Apparatus.	Remarks.	No.
Round, white............	147	79	1882	D. 1st Order	*White* from S. 51° W. round by W. to N. 62° E.; *red* from N. 62° E. to N. 74° E.; *white* from N. 74° E. round by E. to S. 31° W.; and *red* from S. 31° W. to S. 51° W. The lightkeepers' dwellings and outhouses are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of half a minute between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 15 minutes.	15
do.	180	71½	1883	do.	*White* from S. 54° 55′ W. round by W. and N. to S. 85° E.; and *red* from S. 85° E. to S. 28° E. Between the bearings S. 54° 55′ W. and S. 86° 28′ W., the visibility of the light, owing to the height of the land to the eastward of the lighthouse, will depend upon the distance of the observer from it. With the light bearing S. 54° 55′ W., a vessel will need to be between 15 and 20 miles distant in order to see it; but as it is brought to bear more to the westward, it illuminates more of the sea until, on the bearing S. 86° 28′ W., it is visible at all distances between the extreme limit of its range and the shore. To the westward and north-westward of the south-west point of Formosa, the light is entirely obscured by the land, between the bearings S. 80° 13′ E. and S. 28° E. The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 3 minutes between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 8 minutes.	16
Square, white. Lantern let into seaward angle of building.	164¼	16½	1883	D. 6th Order	Visible from N. 36° W. round by N. and E. to S. 20° 30′ E., where the light is shut out by the bluff at the foot of Ape Hill.	17
Mast	60	....	1882	do.	Illuminates the whole sea horizon. During the north-east monsoon vessels may anchor anywhere in from 4½ to 5 fathoms, with the light bearing between N. 62° and N. 73° E. During the south-west monsoon the best anchorage will be found in from 6 to 7 fathoms, with the light bearing about N.E.	18
Round, black	205	33	1875	D. 4th Order	Visible all round except where obscured by the islands. The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 5 minutes between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	19
do.	286	64	1874 altd. 1875	D. 1st Order	The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 3 guns with an interval of 2 minutes between the first and second and second and third, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 12 minutes.	20
do.	257	54	1873	do.	Visible all round. The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 3 minutes between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	21

LIGHTS—*Continued.*

No.	District.	Name of Light.	Location.	Latitude N.	Longitude E.	Fixed, Fixed & Flashing, Revolving, Occulting.	Intervals between the Flashes.	Miles seen in clear Weather.
22	Foochow	Middle Dog	N.E. extremity of Middle Dog Island.	25° 58′ 20″	120° 2′ 20″	F. & Fl.	½ minute	23
23	do.	Pagoda Rock	On the rock in the Pagoda Anchorage.	....	....	F.	....	1
24	Ningpo	Square Island	Summit of island	29° 59′ 21″	121° 45′ 22″	F.	....	9
25	do.	Tiger Island	do. do.	29° 57′ 41″	121° 43′ 49″	F.	....	5
26	Shanghai and Ningpo.	Steep Island	do. do.	30° 12′ 27″	122° 36′ 13″	Rev.	½ minute	22
27	Shanghai ...	West Volcano	do. do.	30° 20′ 25″	121° 51′ 45″	F.	....	15
28	Shanghai and Ningpo.	Bonham Island.........	Southern shoulder of island	30° 37′ 21″	122° 25′ 44″	Rev.	½ minute	22

LIGHTS—*Continued.*

Colour, or any Peculiarity of Light-tower.	Height in Feet of Centre of Light above HW	Height in Feet of Building from Base to Vane.	Year lighted.	Character and Order of Illuminating Apparatus.	Remarks.	No.
Round, white	257	64	1872	D. 1st Order	Visible from S. 70° E. round by S. and W. to N. 40½° E. From S. 70° E. round by E. to N. 40½° E. the light is obscured by the Tongsha and Middle Dog Islands, except from S. 89° E. to N. 81¾° E., and from N. 61½° E. to N. 57° E., where the light is also visible. The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 3 guns with an interval of 2 minutes between the first and second and second and third, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 15 minutes.	22
Iron pile surmounted by a cage, painted red.	16	28	1871	Unclassed ...	*Red*, visible all round	23
Octagonal, white	123	33	1865 altd. 1872	D. 5th Order	Visible all round. A 5 cwt. fog bell is sounded *once* in fogs at 15-second intervals.	24
Octagonal, red and white vertical stripes.	148	30	1865 altd. 1872	D. 6th Order	*Red*, visible all round. A gong is sounded in fogs, *five times* in quick succession, at intervals of about 1 minute. The lightkeepers' dwellings are painted in red and white vertical stripes.	25
Round, black	243	47	1883	D. 3rd Order	Between the bearings N. 20° 54′ E. and N. 41° 17′ E. the light is obscured by Tripod Island, and to the eastward and south-eastward of Video and the Fisherman's Group it is not visible between N. 88° 39′ W. and N. 57° 41′ W. To the westward and north-westward of Hall Island and Hewett Islands it is also obscured between S. 82° 13′ E. and S. 63° 35′ E., with the exception of a ray between the bearings S. 65° 53′ E. and S. 64° 39′ E. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 3 guns with an interval of 3 minutes between the first and second and second and third, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	26
do.	93	33	1872	D. 4th Order	Visible all round. The lightkeepers' dwellings are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 5 minutes between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	27
Round, red and white horizontal bands.	237	47	1883	D. 3rd Order	Alternate *red* and *white* flashes. Between the bearings S. 14° 41′ W. and S. 47° 30′ W. the light is obscured by the high land of Bonham Island, and to the northward and eastward of Elliot, Raffles, and Senhouse Islands it is also obscured from S. 12° 2′ E. to S. 82° 16′ W., with the exception of rays between S. 11° 24′ E. and S. 10° 36′ E., between S. 2° 21′ E. and S. 0° 44′ E., between S. 1° 31′ W. and S. 3° 19′ W., and between S. 50° 5′ W. and S. 60° 11′ W. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 1 minute between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 8 minutes. *Danger.*—Vessels should pass half a mile outside of the small islet, represented on British Admiralty Chart No. 1,199 as lying a little more than 1½ cables to the westward of Bonham Island, in order to avoid its outlying rocks, which are covered from 1 to 2 fathoms at low water.	28

LIGHTS—*Continued.*

No.	District.	Name of Light.	Location.	Latitude N.	Longitude E.	Fixed, Fixed & Flashing, Revolving, Occulting.	Intervals between the Flashes.	Miles seen in clear Weather.
29	Shanghai ...	Gutzlaff..................	Summit of island	30° 48′ 34″	122° 11′ 24″	F.	....	20
30	do. ...	North Saddle	N.E. extremity of island...........	30° 51′ 56″	122° 40′ 21″	Rev.	1 minute	24
31	do. ...	Tungsha..................	Light-vessel on S.W. part of Tungsha Bank, in $3\frac{1}{2}$ fathoms water, with Gutzlaff Lighthouse bearing S. 23° 13′ E., Shaweishan Island N. 37° 10′ E.	31° 8′ 6″	122° 0′ 52″	Rev.	$\frac{1}{2}$ minute	11
32	do. ...	Shaweishan.............	Summit of island	31° 25′ 27″	122° 14′ 42″	F.	....	22
33	do. ...	Kiutoan..................	Light-vessel on N.E. side of the channel, in $3\frac{1}{4}$ fathoms water, with the Kiutoan Beacon bearing west, distant about $2\frac{2}{10}$ miles.	....	....	F.	....	11
34	do. ...	Kiutoan Small Beacon	On the south bank of the Yangtze, 5 miles N.W. of the old Kiutoan Lighthouse.	31° 19′ 10″	121° 39′ 9″	F.	....	5
35	do. ...	*Lismore* Wreck Light-boat.	About 500 feet to the northward of the *Lismore* wreck.	....	....	F.	....	1

LIGHTS—*Continued.*

Colour, or any Peculiarity of Light-tower.	Height in Feet of Centre of Light above HW	Height in Feet of Building from Base to Vane.	Year lighted.	Character and Order of Illuminating Apparatus.	REMARKS.	No.
No tower, white lantern.	270	24	1869	D. 3rd Order	Visible all round. Telegraph station. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 3 guns with an interval of 2 minutes between the first and second and second and third, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 15 minutes.	29
Upperpart black, lower white.	273	54	1870	D. 1st Order	Visible from N. 52° W. round by W. and S. to N. 73° E. The remaining angle is chiefly obscured by the Saddle and Parker groups of islands. The lightkeepers' dwellings are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 3 guns with an interval of 1 minute between the first and second and 5 minutes between the second and third, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	30
Red, one mast with black ball.	40	…………	1855 altd. 1871	C. …………	"TUNGSHA" on her sides. A gun will be fired when vessels are seen running into danger, and the course that should be steered will be signalled by the Commercial Code. In foggy weather a steam horn will be sounded at intervals of 10 seconds. When necessary to lower the light for trimming, a small *white* light will be hoisted, and a flash-light burned; and, in order to show the direction in which the light-vessel is riding, a *white* riding-light will be exhibited from sunset to sunrise from the fore-stay, at a height of 6 feet above the rail. If the light-vessel be driven from her proper position to one where she is of no use as a guide to shipping, the usual light will not be shown, but a *fixed red* light will be exhibited at each end of the vessel; the ball will be struck as soon as possible, and till struck it will be surmounted by a red flag.	31
Round, black ………	229	55	1871	D. 1st Order	Visible all round. The lightkeepers' dwellings are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 3 guns with an interval of 5 minutes between the first and second and 1 minute between the second and third, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 15 minutes.	32
Red, one mast with black ball.	35	…………	1878	C. …………	"KIUTOAN" on her sides. In foggy weather a 10 cwt. fog bell will be struck three double blows in each minute, the interval between the blows of each pair being 5 seconds, and between two successive pairs of blows 15 seconds. When necessary to lower the light for trimming, a small *white* light will be hoisted, and a flash-light burned; and, in order to show the direction in which the light-vessel is riding, a *white* riding-light will be exhibited from sunset to sunrise from the fore-stay, at a height of 6 feet above the rail. If the light-vessel be driven from her proper position to one where she is of no use as a guide to shipping, the usual light will not be shown, but a *fixed red* light will be exhibited at each end of the vessel; the ball will be struck as soon as possible, and till struck it will be surmounted by a red flag.	33
Wooden tripod, black	32	40	1868 altd. 1878	D. 6th Order	*Red*, visible all round, except on the landward side……………	34
Junk with one mast and ball.	…………	…………	1877	Unclassed …	A *red* light with a *white* light underneath it……………………	35

LIGHTS—*Continued.*

No.	District.	Name of Light.	Location.	Latitude N.	Longitude E.	Fixed, Fixed & Flashing, Revolving, Occulting.	Intervals between the Flashes.	Miles seen in clear Weather.
36	Shanghai.....	Woosung..................	Left bank of the Woosung River, near Woosung.	31° 23′ 18″	121° 29′ 36″	F.	....	12 white, 8 red, 5 green
37, 38	do. ...	Woosung Inner-Bar Lights.	Right bank of the Woosung River	....	....	F.	....	2
39	Chinkiang, Yangtze.	North Tree	On the north bank of the river....	....	....	F.	....	7
40	do. ...	Cooper Island...........	On the upper end of Cooper Island, known also as Cooper Bank.	....	....	F.	....	7
41	do. ...	Tung-lo-tu	On the north bank of the river ...	....	....	F.	....	7
42	do. ...	Bate Point, or Fishbourne Island.	On Bate Point	....	....	F.	....	7
43	do. ...	Beaver, or Pottinger Island.	On the southern extremity of the island.	....	....	F.	....	7
44	do. ...	Tantu......................	On the south bank of the river, distant 5.62 miles below Silver Island.	....	....	F.	....	7
45	do. ...	Pei-sin-chow............	Lower (east) end of island, distant 5 miles from Chinkiang.	....	....	F.	....	7
46	do. ...	Bethune Point..........	Upper (west) end of Pei-sin-chow Island.	....	....	F.	....	7
47	do. ...	Mud Fort	On a low point on the north bank of the river, marked on some of the British Admiralty charts as Mud Fort, distant from Bethune Point 21 miles.	....	....	F.	....	7
48	do. ...	Wade Island............	On the island, about 4 miles from the lower (north) end.	....	....	F.	....	7
49	do. ...	Wuhu......................	East bank of the river, 3½ miles above Point Morton.	....	....	F.	....	7
50	Kiukiang, Yangtze.	Point Haines............	On the south (right) bank of the river.	....	....	F.	....	7
51	do. ...	Buckminster Island...	On Chin-tê-chow Island, about 1½ miles from the lower (north) end.	....	....	F.	....	7
52	do. ...	Fitzroy Island..........	On the island, ¾ mile from the lower (east) end.	....	....	F.	....	7
53	do. ...	Tai-tzŭ-chi...............	On the N.W. side of the Rock Temple.	....	....	F.	....	7
54	do. ...	*Kiangloong* Wreck Light-boat.	Moored off the left bank of the river abreast the wreck.	....	....	F.	....	4
55	do. ...	Hen Point...............	On the left bank of the river, opposite Hen Point.	....	....	F.	....	7
56	do. ...	Eagle Island............	Lower (north-east) end of island...	....	....	F.	....	7
57	do. ...	Christmas Island.......	Upper (south) end of island.........	....	....	F.	....	7

LIGHTS—*Continued.*

Colour, or any Peculiarity of Light-tower.	Height in Feet of Centre of Light above HW	Height in Feet of Building from Base to Vane.	Year lighted.	Character and Order of Illuminating Apparatus.	REMARKS.	No.
Square, black...........	50	58	1865 altd. 1872, 1873, 1875, and 1878.	D. 4th Order	*White* from the bank of the Yangtze to the westward of the lighthouse to S. 2° W.; *green* from S. 2° W. to S. 59° 15′ W.; *white* from S. 59° 15′ W. to S. 72° 20′ W.; and *red* from S. 72° 20′ W. to the left bank of the Woosung River.	36
....	....	....	1872	Unclassed ...	A *red* low light on the river's bank, and a *white* high one on a pole a little inland. *See* Nos. 45, 46 in list of Beacons.	37, 38
Black, single pole, surmounted by wicker ball.	65	73	1868	D. 6th Order	Altered 1873. Position changed 1874. In July 1884 this light was moved 288 yards N. 21° E. from its former position.	39
do.	51	62	1867	do.	Altered 1873. Position changed 1876, 1880, 1881, 1882, and 1883. In June 1885 this light was shifted about 725 yards N. 70° E. from its last position.	40
do.	49	59	1871	do.	Altered 1875. Position changed 1877............................	41
do.	53	63	1867	do.	Altered 1873..	42
do.	52	62	1867	do.	Altered 1872. Position changed 1878. In September 1885 this light was shifted about 690 yards S. 11° E. from its last position.	43
do.	75	43	1867	do.	Altered 1875..	44
do.	51	64	1871	do.	Altered 1873..	45
do.	55	68	1867	do.	Altered 1875. Position changed 1878, 1881, and 1883. In October 1885 this light was shifted about 155 yards S. 70° E. from its last position.	46
do.	55	70	1877	do.	Position changed 1878 and 1881	47
do.	52	70	1867	do.	Altered 1873..	48
do.	77	44	1867	do.	Altered 1875..	49
do.	34	48	1870	do.	Altered 1871..	50
do.	32	46	1870	do.	Altered 1871. Position changed 1883..............................	51
do.	32	46	1870	do.	Altered 1871..	52
do.	24	40	1870	do.	Altered 1881..	53
One mast with black ball.	25	....	1873	do.	Altered 1875, 1876, and 1883. In March 1885 the *white* light was replaced by a *red* one. The light-boat is moored abreast of the wreck (not over it), to mark the starboard side of the channel for vessels entering from seaward; and it should be passed close-to in order to avoid the wreck. From the wreck Hen Point bears S. 68° E., and Tai-tzŭ-chi Rock Temple N. 35° E.	54
Grey, single mast......	35	38½	1870	do.	Altered 1871. Position changed 1882. Discontinued 1883. In March 1885 re-established in its last position; and showing a white light, visible all round.	55
Black, single pole, surmounted by wicker ball.	32	46	1870	do.	Altered 1871. Position changed 1879, 1880, 1882, and 1884.	56
do.	34	48	1870	do.	Altered 1871. Position changed 1873, 1874, 1878, 1880, and 1883.	57

LIGHTS—*Continued.*

No.	District.	Name of Light.	Location.	Latitude N.	Longitude E.	Fixed, Fixed & Flashing, Revolving, Occulting.	Intervals between the Flashes.	Miles seen in clear Weather.
58	Kiukiang, Yangtze.	Spencer Rock Light-boat.	Moored immediately below the lower or N.E. ledge of Spencer Rock, in Tungliu Reach.	....	....	F.	....	7
59	do. ...	Dove Point........	On the north (left) bank of the river.	....	....	F.	....	7
60	do. ...	N.E. Crossing........	do. do.	....	....	F.	....	7
61	do. ...	Point Otter, Lay Island	Lower (east) end of island	....	....	F.	....	7
62	do. ...	Kiukiang Rocks........	On the south (right) bank of the river.	....	....	F.	....	2
63	do. ...	*Esbern Snare* Wreck	Off the centre of Bund	....	....	F.	....	2
64	Hankow, Yangtze.	Hwang-lin-chow	On outer edge of shoal which extends from left bank of the river, and opposite lower end of island on which old beacon stands.	....	....	F.	....	7
65	do. ...	Low Point........	On the point........	....	....	F.	....	7
66	do. ...	Ruined Fort........	On top of fort	....	....	F.	....	7
67	do. ...	Lee Rock	On bluff about 1 mile above rock	....	....	F.	....	7
68	do. ...	Yanglow and Ten-foot Rock Light-boat.	Off the point opposite Yanglow, and on edge of north bank of river opposite Ten-foot Rock.	....	....	F.	....	7
69	do. ...	Collinson and Hunter Islands Light-boat.	Off lower end of Collinson Island and upper end of Hunter Island	....	....	F.	....	7
70	do. ...	Collinson Island Light-boat.	Off upper end of Collinson Island	....	....	F.	....	7
71	do. ...	Gravener Island Light-boat.	Off upper end of Gravener Island	....	....	F.	....	7
72	do. ...	Bouncer Island Light-boat.	Off lower end of Bouncer Island...	....	....	F.	....	7
73	do. ...	Single Tree, or Liu-chia-miao.	On left bank of river about 3 miles below city wall, Hankow.	....	....	F.	....	2
74	Chefoo........	South-east Shantung Promontory.	On the south-eastern elbow of the South-east Shantung Promontory.	36° 54′ 0″	122° 31′ 45″	Rev.	½ minute	$15\frac{7}{10}$

LIGHTS—*Continued.*

Colour, or any Peculiarity of Light-tower.	Height in Feet of Centre of Light above HW	Height in Feet of Building from Base to Vane.	Year lighted.	Character and Order of Illuminating Apparatus.	REMARKS.	No.
One mast with black ball.	25	....	1873	D. 6th Order	Altered 1884. The light-boat is moored at the lower or N.E. ledge of Spencer Rock, to mark the starboard side of the south channel for vessels entering from seaward. Only in position during low stage of the river.	58
Black, single pole, surmounted by wicker ball.	32	46	1870	do.	Altered 1871. Position changed 1872, 1873, 1874, 1875, 1877, 1878, and 1882.	59
do.	34	48	1870	do.	Altered 1871. Position changed 1872, 1874, 1875, and 1883	60
do.	34	48	1870	do.	Altered 1871..	61
Black, single pole......	47	12	1870	Unclassed ...	*Red* pointing to the rocks; *white* in approaching from above or below.	62
Black, floating frame, surmounted by wicker ball.	6	....	1875	do. ...	*Red.* Over the wreck; used only during a low stage of the river.	63
Light exhibited from a Native boat.	25	....	1872	D. 6th Order	The beacon originally standing at Hwang-lin-chow having been removed, in consequence of the washing away of the island on which it stood, this point is being temporarily lighted by a light-boat; this boat will be kept in its present position until arrangements, now in progress, to put up a permanent light are complete.	64
A single pole, with ball on top.	43	58	1871	do.	Altered 1872. *Red.* Visible from S.E. round by S. and W. to N. 15° E.	65
A single pole, with ball on top, extending through roof of house.	31	....	1873	...	Visible from N. 25° E. round by N. and W. to S. 35° E......	66
Lantern-hut grey; light shown from corner.	60	....	1882	D. 6th Order	*Red.* Sixth-order dioptric apparatus substituted for stake-lantern in December 1884.	67
One mast and ball.....	25	....	1873	do.	Stationed off the point opposite Yang-low from about 1st July to 31st October, and opposite Ten-foot Rock from about 1st November to 30th June.	68
do.	25	....	1871	do.	Altered 1873. Stationed off the upper end of Hunter Island from about 1st January to 30th June, and off Collinson Island from about 1st July to 31st December.	69
do.	25	....	1871	do.	Altered 1873. Stationed on north bank from about 1st January to 30th June, and on south bank, to mark cut-off, from about 1st July to 31st December.	70
do.	25	....	1869	do.	Altered 1873. Position changed as necessary......................	71
do.	25	....	1871	do.	Altered 1873. Stationed on north side of spit, to mark cut-off, from about 1st July to 31st December, and on south side from about 1st January to 30th June.	72
do.	31	....	1885	Stake lantern	*Red.* Established temporarily to mark upper end of a sand patch lying off the river bank, and to show the point at which vessels should begin to bear across the river.	73
Round, red and white horizontal bands.	96½	77½	1883	D. 1st Order	The lightkeepers' dwellings and boundary wall are painted white. A first-class siren, giving a blast of 4 seconds duration at intervals of 1½ minutes, will be sounded during thick or foggy weather. *Dangers.*—Regarding the island which forms the South-east Shantung Promontory, the "China Sea Directory," vol. III, 1874, p. 463, states that:—"Extensive reefs, some detached, border the whole shore, which is of the most dangerous character and should not be passed at less than a mile, except off the western bluff, nor in less than 9 fathoms water."	74

LIGHTS—*Continued.*

No.	District.	Name of Light.	Location.	Latitude N.	Longitude E.	Fixed, Fixed & Flashing, Revolving, Occulting.	Intervals between the Flashes.	Miles seen in clear Weather.
75	Chefoo........	North-east Shantung Promontory.	On the N.E. extremity of the North-east Shantung Promontory.	37° 24′ 0″	122° 42′ 0″	F.	....	22
76	do.	Chefoo Light............	Kung-tung-tao Island, highest part	37° 34′ 10″	121° 32′ 15″	F.	....	22
77	do.	Howki Island	Summit of island	38° 3′ 45″	120° 39′ 0″	Rev.	½ minute	24
78	Tientsin......	Taku	Light-vessel outside the bar and moored in 17 feet of water at low water springs.	38° 53′ 0″	117° 50′ 30″	F.	....	10
79	Newchwang	Newchwang	Light-vessel in 5 fathoms water, about 3½ miles W.S.W. from bar of Liao River.	40° 35′ 0″	122° 0′ 0″	F.	....	11

LIGHTS—*Continued.*

Colour, or any Peculiarity of Light-tower.	Height in Feet of Centre of Light above HW	Height in Feet of Building from Base to Vane.	Year lighted.	Character and Order of Illuminating Apparatus.	REMARKS.	No.
Round, white	220	64	1874	D. 1st Order	*White* from S. 62° E. to S. 30° E.; *red* from S. 30° E. to S. 17° E.; *white* from S. 17° E. round by S. and W. to N. 21° E.; and *red* from N. 21° E. to N. 49° E. Between S. 59¼° E. and S. 18¼° E. the light is seven times obscured by peaks; the obscuration between S. 26° 18′ E. and S. 23° 10′ E. being caused by Alceste Island. The lightkeepers' dwellings and boundary wall are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 1 minute between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes.	75
Round, white and red horizontal bands.	242	45	1867	C. 1st Order	Visible all round. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 5 minutes between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 8 minutes.	76
Round, black	328½	46½	1882	D. 1st Order	Visible all round. The lightkeepers' dwellings are painted white. The keepers at this lighthouse on hearing a bell, fog horn, steam whistle, or any other sound, during foggy or thick weather, which shall indicate the proximity of a vessel, will fire 2 guns with an interval of 2 minutes between them, and, if the vessel's fog signal is still heard, will repeat the firing after a space of 10 minutes. *Note.*—The exhibition of this light will hereafter be discontinued on the 16th December of each year and resumed on the 1st March of the following year.	77
Red, one mast with black ball.	37½	....	1880	D.	"TAKU" on her sides. In foggy weather a gong will be sounded at 1-minute intervals. In order to show the direction in which the light-vessel is riding, a *white* riding-light will be exhibited from sunset to sunrise from the fore-stay, at a height of 6 feet above the rail. This light-vessel is only in position from the opening of the river to the 30th November, on account of ice. If the light-vessel be driven from her proper position to one where she is of no use as a guide to shipping, the usual light will not be shown, but a *fixed red* light will be exhibited at each end of the vessel; the ball will be struck as soon as possible, and till struck it will be surmounted by a red flag.	78
Red, three masts, with black ball on main-mast only.	40	....	1867 altd. 1871	C.	"NEWCHWANG" on her sides. A gun will be fired when vessels are seen running into danger, and the course that should be steered will be signalled by the Commercial Code. In foggy weather a steam fog horn will be sounded at intervals of 10 seconds. When necessary to lower the light for trimming, a small *white* light will be hoisted and a blue light burned; and, in order to show the direction in which the light-vessel is riding, a *white* riding-light will be exhibited from sunset to sunrise from the fore-stay, at a height of 6 feet above the rail. This light-vessel is only in position from about the 1st April to the 15th November, on account of the ice. If the light-vessel be driven from her proper position to one where she is of no use as a guide to shipping, the usual light will not be shown, but a *fixed red* light will be exhibited at each end of the vessel; the ball will be struck as soon as possible, and till struck it will be surmounted by a red flag.	79

BUOYS.

District Number and Name.	Mark.		Depth: Low Water Spring Tides.	Note.
	Description.	Position.		
Canton.				
1. Dutch Folly North Buoy	Wooden conical-shaped buoy, painted red above water.	Near Dutch Folly Island, Canton River.	8 feet ……	Marks the western extremity of the channel, northern side, between the rocks, on which the depth of water is 4 feet at low water spring tides. A *red* light is placed on it from sunset to sunrise.
2. Dutch Folly South Buoy	Wooden conical-shaped buoy, painted black.	do. do.	12 do. ……	Marks the western extremity of the channel, southern side, between the rocks. Moored close to the northern side of the rock, on which the depth of water is 2 feet at low water spring tides. A *green* light is placed on it from sunset to sunrise.
3. Macao Fort Rock Buoy	Wooden conical-shaped buoy, painted black.	On the north-east extremity of Macao Fort Rock.	10 do. ……	Marks the north-east extremity of Macao Fort Rock. A *green* light is placed on it from sunset to sunrise. Vessels should pass between this buoy and the Haeshin Rock Buoy.
4. Haeshin Rock Buoy…..	Wooden conical-shaped buoy, painted red above water.	South-western edge of Haeshin Rock.	10 do. ……	Marks the south-western edge of Haeshin Rock. A *red* light is placed on the buoy from sunset to sunrise. Vessels should pass between this buoy and the Macao Fort Rock Buoy.
5. Shamien Rock Buoy…..	Wooden conical-shaped buoy, painted in red and black chequers above water.	On the northern extremity of the Shamien Rocks.	12 do. ……	Marks the northern extremity of Shamien Rocks. A *red* light is placed on the buoy from sunset to sunrise. Vessels entering should leave this buoy on the port hand when rounding-to to anchor in the harbour.
6. Fa-ti Rock Buoy………	A wooden buoy painted in red and black chequers.	On the northern extremity of the rock.	12 do. ……	Marks the northern extremity of Fa-ti Rock, on which there is $7\frac{1}{2}$ feet of water at low water springs.
Swatow.				
1. Dove Rock Whistling Buoy.	Red and black chequered automatic whistling buoy, 10 feet in diameter at the water line.	Off the Dove Rock……………	$4\frac{1}{2}$ fathoms..	Placed about 2 cables from the pinnacle of the Dove Rock, so as to mark the S.E. extremity of the reef.
2. Mud Flat Buoy ……….	Red conical buoy, 6 feet in diameter at the water line, surmounted by a black spherical cage.	Outer edge of Mud Bank; E. $\frac{1}{2}$ N. of Customs Pier; distant three-quarters of a mile.	2 do. …	Marks the southern edge of the mud bank on the north side of the harbour.
3. Wyoming Rock Buoy…	Black conical buoy, 6 feet in diameter at the water line, surmounted by a black inverted frustum cage.	Off the rock, Swatow Anchorage	7 do. …	This buoy is placed about 40 yards N.E. from the rock.

BUOYS—*Continued.*

District Number and Name.	Mark.		Depth: Low Water Spring Tides.	Note.
	Description.	Position.		
4. Madras Rock Buoy......	Black conical buoy, 6 feet in diameter at the water line, surmounted by a black spherical cage.	Off the rock, Swatow Anchorage	3½ fathoms...	This buoy is placed about 40 yards N. by E. from the rock, which has only 8 feet of water on it at low water spring tides.
Amoy.				
1. Coker Rocks East Buoy	Black and white chequered conical buoy, 6 feet in diameter.	Eastward of the Coker Rocks	8 fathoms...	Vessels should not pass between these buoys.
2. Coker Rocks West Buoy	Red and white chequered conical buoy, 6 feet 5 inches in diameter.	Westward of the Coker Rocks	6¾ do. ...	
3. Brown's Rocks East Buoy.	Black and white chequered conical buoy, 6 feet in diameter, surmounted by a black spherical cage 2 feet in diameter.	Eastward of the Brown's Rocks	12 do. ...	Vessels should not pass between these buoys.
4. Brown's Rocks West Buoy.	Red and white chequered conical buoy, 6 feet in diameter, surmounted by a black spherical cage 2 feet in diameter.	Westward of the Brown's Rocks	6½ do. ...	
5. Harbour Rock Buoy.....	Red and black chequered nun buoy, 3 feet 4 inches in diameter.	Close to the western edge of the Harbour Rock.	4½ do. ...	About 130 fathoms S.W. of Dock Island. Vessels passing inside this buoy should give it a berth of not less than 50 fathoms.
6. Kellett Spit Buoy	Red and black vertically striped conical buoy, 6 feet in diameter.	On the northern end of the Kellett Spit.	4 do. ...	Vessels should not pass between this buoy and the Island of Kulangsu.
7. Quemoy Spit Buoy......	Red automatic whistling buoy. The name "QUEMOY" is painted on the buoy in white letters.	Off the south-eastern extremity of the Quemoy Spit.	8 do. ...	10 feet in diameter. From the buoy, Quemoy Pagoda bears N. 10° E. and Taitan Lighthouse N. 73° W. Vessels should not pass between this buoy and Quemoy Island.
8. Minerva Rock Buoy.....	Black nun buoy, 7 feet 6 inches in diameter. The name "MINERVA" is painted on the buoy in white letters.	To the south-eastward of Minerva Rock (off the extremity of Cass Spit).	4 do. ...	From the buoy, the summit of Monkey Island bears N. 24½° E., Druid Head (on Kulangsu) bears N. 62° E.; Cornwallis Stone (on Amoy) bears S. 85° E. Vessels should not pass between this buoy and Sungseu Island.
Tamsui.				
1. Northern Bar-buoy......	Black conical buoy, 6 feet in diameter.	Northern side of approach to Tamsui Bar.	30 feet	Chinese Black Beacon, N. 55° E.; White Beacon, S. 86° E.
2. Southern Bar-buoy......	Red conical buoy, 6 feet in diameter.	Southern side of approach to Tamsui Bar.	27 do.	Chinese Black Beacon, N. 47° E.; White Beacon, N. 87° E.
3. Harbour Buoy............	Red nun buoy, surmounted by a red spherical cage.	Northern edge of mud bank, Tamsui Harbour.	7 do.	White Beacon, N. 6° W.; distant about 450 yards.
4. Inflexible Reef Buoy....	Black conical buoy, 4 feet in diameter, surmounted by a black spherical cage.	Inflexible Reef, Kelung Harbour.	66 do.	Image Point, N. 60° W.; Ruin Rock, S. 28° W.
5. Coral Shoal Buoy.........	Red conical buoy, 4 feet in diameter, surmounted by a black spherical cage.	To the eastward of shoal, Kelung Harbour.	30 do.	Image Point, N. 24° W.; Ruin Rock, S. 61° W.

BUOYS—*Continued.*

District Number and Name.	Mark.		Depth: Low Water Spring Tides.	Note.
	Description.	Position.		
Foochow.				
1. Min Reef Whistling Buoy.	Red and black chequered automatic whistling buoy. The name "Min" is painted on the buoy in white letters.	Off the northern extremity of Min Reef.	11 fathoms...	10 feet diameter. From the buoy Chang-chi Peak bears N. 49° E.; Sharp Peak bears N. 73° W.
2. Aymar Rock Buoy	Red and black chequered buoy, surmounted by a black diamond-shaped cage. The name "Aymar" is painted on the buoy in white letters.	Aymar Rock, entrance to Min River.	9 do. ...	6 feet diameter, about 3 cables E. of the rock. Chang-chi Peak bears N. 66° 30′ E.; Middle Dog Lighthouse bears S. 35° 15′ E.; Sea Dog bears S. 55° 30′ E.
3. Outer or No. 1 Fairway Buoy.	Red and black horizontal striped fairway buoy, surmounted by a black cage.	Entrance to Min River	7 do. ...	10 feet diameter and 18 feet high to top of cage. Sharp Peak bears N. 85¼° W.; Triangle Head bears S. 50° W.
4. East Channel Entrance Fairway Buoy.	Red and black horizontal striped, with a cage.	Entrance to Min River, East Channel.	4 do. ...	Sharp Peak bears N. 74° W.; Square Peak bears S. 86° W.; Sand Peak bears S. 47° 30′ W.
5. North Breakers Bank Buoy.	Temporarily marked by a black nun buoy, without a cage.	Northern edge of the North Breakers Bank, and port side of the North Channel, Outer Bar.	6 feet........	Sharp Peak bears N. 81° 30′ W.; Round Island bears S. 62° W.; Black Head bears S. 24° W.
6. Middle or No. 2 Fairway Buoy.	Red and black horizontal striped fairway buoy, surmounted by a black conical frustum cage.	Entrance to Min River..........	2½ fathoms...	10 feet diameter and 18 feet high to top of cage. Sharp Peak bears N. 76° W.; Triangle Head bears S. 49° W.
7. Inner or No. 3 Fairway Buoy.	Red and black horizontal striped fairway buoy, surmounted by a black cage.	do. do.	6½ do. ...	10 feet diameter and 18 feet high to top of cage. Sharp Peak bears N. 47° W.; Round Island bears S. 58° W.
8. Eme Rock Buoy..........	Red nun buoy	Starboard side of channel, Min River.	2¼ do. ...	Clears Eme Rocks. Sharp Peak Point bears S. 77° E.; Sharp Peak Summit bears N. 12° E.
9. Temple Rock Buoy	do.	Temple Rock, Min River	3½ do. ...	Marks the southern extremity of the rock.
10. Stone Barrier Buoy......	Black nun buoy	Close to the northern end of Stone Barrier opposite Temple Point, Min River.	3½ do. ...	Vessels should not pass between this buoy and Wild Duck Bank (West Brother).
11. Spiteful Island Red Buoy	Red nun buoy..................	Starboard side of channel, Min River.	3 do. ...	Clears the rocks on starboard hand.
12. do. Black Buoy	Black nun buoy	Port side of channel, Min River.	8 do. ...	Clears the rocks off Spiteful Island.
13. Tui-chi Rocks Buoy	do.	Near the Tui-chi Rocks, Min River.	5 do. ...	Marks the northern extremity of the rocks.
Ningpo.				
1. Sesostris Rock Buoy	Black and red chequers, surmounted by a black cage.	Near the rock in mid-channel	5 fathoms ...	This buoy is placed to the eastward of the rock, on which there is 9 feet of water at low water spring tides.
2. Seaou-yew Spit Buoy ...	Black buoy surmounted by a black cage.	On the end of the mud spit projecting from Seaou-yew Island.	14 feet	Tiger Island Lighthouse bears S. 23° W.; summit of Look-out Hill bears S. 40° E.

BUOYS—*Continued.*

District Number and Name.	Mark.		Depth: Low Water Spring Tides.	Note.
	Description.	Position.		
Shanghai.				
1. Ariadne Rock Whistling Buoy.	Red and black chequered automatic whistling buoy.	About 50 fathoms south of the Ariadne Rock.	33 feet	8 feet in diameter, and 8 feet above the water line. The Ariadne Rock just shows at low water spring tides.
2. Blockhouse Shoal Buoy	Red buoy, with black spherical cage.	Off the S.W. edge of the shoal patches to the south-westward of Blockhouse Shoal.	22 do.	6 feet diameter, 12 feet high. Kiutoan Small Beacon bears N. 81° 30′ W., distant about $3\frac{7}{10}$ miles.
3. *Lismore* Wreck Buoy ...	Green nun buoy, with the word "Wreck" and the numeral I painted on it in white.	Immediately below the wreck of the *Lismore*, in line with the wreck and Woosung Lighthouse.	13 do.	4 feet diameter.
4. Woosung Spit Buoy.....	Red and black vertical striped buoy with spherical cage.	On the eastern end of Woosung Spit and starboard side of channel at the entrance to the Woosung River.	18 do.	10 feet diameter, 18 feet high to top of cage.
Yangtze River above Woosung.				
5. Bush Island Buoy	Red and black vertical striped buoy, 6 feet in diameter, with black spherical cage.	On elbow of shoal which extends from the north-western shore of Bush Island.	Uncertain....	Vessels should not pass between this buoy and Bush Island.
6. Dove's Nest Buoy	Red buoy with black spherical cage.	On the edge of the Dove's Nest Shoal, on the starboard side of the channel.	do. ...	6 feet diameter, $11\frac{1}{2}$ feet high.
7. Triumph Bank Buoy.†	Black buoy with black inverted frustum cage.	On edge of the bank which extends from the southern shore.	do. ...	do. do. *
8. Actæon Buoy† ...	Red buoy with black spherical cage.	S.W. elbow of Actæon Shoal...	do. ...	do. do. *
9. Centaur Lower Buoy.†	Black buoy with black spherical cage.	S.E. end of the Centaur Bank	do. ...	do. do. *
10. Actæon Shoal Upper Buoy.†	do. do.	Off the north-western elbow of the Actæon Shoal.	do. ...	do. do. *
11. Middle Bank Buoy.‡	do. do.	Off the S.E. extremity of Middle Bank.	do. ...	do. do. *
12. Middle Bank Upper Buoy.‡	Red buoy with black spherical cage.	Off the edge of the bank forming the north-eastern side of the channel.	do. ...	do. do. *
13. South Bank Buoy‡	Black buoy with black spherical cage.	Off the edge of the bank forming the south-western side of the channel.	do. ...	do. do. *
14. Langshan Buoy‡	Red buoy with black spherical cage.	Off the edge of the bank forming the north-eastern side of the channel.	do. ...	do. do. *
15. Vine Point Lower Buoy.‡	do. do.	On the edge of the lower part of Vine Point Shoal.	do. ...	do. do. *
16. Vine Point Buoy‡	do. do.	Off the north-western edge of Vine Point Shoal.	do. ...	10 feet diameter, 18 feet high to top of cage.*
17. North Tree Rocks Buoy.	do. do.	About 100 yards to the southwestward of the rocks.	do. ...	Vessels should not attempt to pass between this buoy and the left bank of the river.
18. Drinkwater Point Buoy	Red and black horizontal striped fairway buoy, with black spherical cage.	In the North Channel	25 feet	10 feet diameter, 18 feet high to top of cage. Shaweishan Lighthouse bears N. 83° E., distant about $11\frac{1}{4}$ miles.

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* The banks at the Centaur and Langshan Crossings are subject to frequent changes. These parts of the river should therefore be navigated with caution, and the lead kept going.

† These four buoys lead over the Centaur Crossing.

‡ These six buoys lead over the Langshan Crossing.

BUOYS—*Continued.*

District Number and Name.	Mark.		Depth: Low Water Spring Tides.	Note.
	Description.	Position.		
TIENTSIN.				
1. Entrance Buoy…………	Red iron buoy, surmounted by a black cage.	On the outer edge of Taku bar, to mark its commencement and the entrance to the channel.	2 feet.	
2. South Buoy……………	Black iron buoy……………	On the south side of the bar, to mark a bend in the channel.	4 do.	
3. Inner Buoy……………	Red iron buoy……………	On the inner edge of the bar, to mark the inner entrance to the channel.	4 do.	
NEWCHWANG.				
1. Entrance Buoy*………	Black conical buoy, surmounted by a black frustum cage.	On the S.W. extremity of west bank and outer edge of the bar.	18 feet…….	Light-vessel bears S. 64° W., distant 3½ miles. Inner Buoy bears N. 71° E., distant 2¾ miles.
2. Middle Ground Buoy*..	Red nun buoy, surmounted by a black spherical cage.	On the S.W. edge of the Middle Ground Shoal.	6 do. …….	Light-vessel bears S. 79½° W., distant 4½ miles.
3. Inner Buoy*……………	Black conical buoy, surmounted by a black diamond-shaped cage.	On the S.E. edge of the west bank and inner edge of the bar.	10 do.	

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* From the 1st November until the 10th April the three iron buoys in the Newchwang district are replaced by wooden spar buoys, of similar colours, surmounted by black cages fixed on bamboo perches.

BEACONS.

No.	Name of District and Name of Mark.	Position.	Description.	Remarks.
	Canton.			
1, 2	Dutch Folly North Beacons.	On the sunken rocks near Dutch Folly Island, north side of the channel.	Round granite beacons, 26 feet high, painted red, and surmounted by a lantern.	Fixed *red* lights are exhibited from sunset to sunrise.
3	Dutch Folly South Beacon.	On the sunken rocks near Dutch Folly Island, south side of the channel.	A round stone and brick beacon, 22 feet high, painted black, and surmounted by a lantern.	A fixed *green* light is exhibited from sunset to sunrise.
4–6	Taishek Barrier Beacons.	On the northern side of the Taishek Barrier Channel, Blenheim Passage.	Spar beacons, 28 feet above high water. The eastern and western beacons are each surmounted by a circular frame, and painted red, white, and red. The middle beacon is painted red and white.	Fixed *red* lights are exhibited from sunset to sunrise on the eastern and western beacons.
7	Taimei Beacon........	On the sandspit off 49th Point, Marines Island, Blenheim Passage.	Spar beacon, 24 feet above high water, surmounted by a square frame, and painted black, white, and black.	A fixed *white* light is exhibited from sunset to sunrise.
	Swatow.			
8	Gochang Rock Beacon.	On the rock, Swatow Anchorage	Black, granite beacon, 5 feet in diameter, 5 feet high, and carrying a 5 feet high pole surmounted by a black wicker basket.	The highest of these rocks is covered at high water. From the beacon Gochang Point bears S. 31° E., and is distant about 350 yards; Bottefurh's Rock bears N. 76° E.
	Amoy.			
9	Alibi Rock Beacon...	On a rock a little to the N.E. of the northern end of Kulangsu.	Black, granite obelisk, 22 feet high above the rock.	The rock dries at low water.
10	Kangsimtah Beacon.	These two beacons mark two reefs of rocks (extending out from Kulangsu) at points where they uncover at ¾ ebb.	Black, granite obelisk, 15 feet high above the rock on which it is built.	A rock, covered 14½ feet at low water springs, lies N. by E. 40 yards from the southern of these two beacons; and S.E. by E. 70 yards from the same beacon is a patch of three pinnacle rocks, the outer one of which has only 8 feet of water on it at low water springs. From this outer rock Alibi Rock Beacon is seen just open to the N.E. of the northern of these two beacons and in line with the west face of Monkey Island. The highest pinnacle of the Coker Rocks is in line with these two beacons, bearing from them about S. 34° E.
11	Chiotah Beacon		Black, granite obelisk, 17 feet high above the rock on which it is built.	
12–24	Harbour Marks.......	On rocks in the Inner Harbour. Three off the northern end of Kulangsu; six on the west side of the Inner Harbour; and four on the east side of the Inner Harbour.	13 perches, with round basket tops. The four on the eastern side of the Inner Harbour are painted red; the remaining nine black. The baskets on all the perches are painted white.	The first three mark the northern edges of reefs off the north end of Kulangsu. The next six are on rocks on the western side of the Inner Harbour. The last four are on the eastern side.

BEACONS—*Continued.*

No.	Name of District and Name of Mark.	Position.	Description.	Remarks.
	TAMSUI.			
25	Entrance Beacon.....	On the northern bank of the river, Tamsui, 1,030 yards from the Red Fort, from which it bears N. 87° W.	A pyramid-shaped beacon, 49 feet high, consisting of four poles surmounted by a wicker cage; the whole painted white.	Beacon in line with Red Fort forms a leading mark for entering Tamsui Harbour, subject to changes in Bar channel.
26	Bush Island Beacon	On the extreme west end of Bush Island, Kelung Harbour.	Grating, 8 feet by 6 feet, mounted on a single spar 42 feet high. The grating is painted white, the spar is painted black.	
	FOOCHOW.			
27	Oriental Rock Beacon.*	On Oriental Rock, Kimpai Pass	Spar mounted with a cage, 4 ft. square on the upper and 2 ft. 6 in. on the lower part. Painted red, with the words "ORIENTAL ROCK" in white on the cage. Shows 14 ft. above high water spring tides.	At high water spring tides the rock is covered 4 feet. Vessels must pass to the south of the beacon, and not nearer than 100 feet.
28	Half-tide Rock Beacon.	On the Half-tide Rock, near the upper end of Tongue Shoal.	Built of granite, painted black	The rock is submerged 5 feet at high water springs.
29	Pagoda Rock Beacon	On the rock in the Pagoda Anchorage.	Iron pile surmounted by a cage painted red.	A *red* light is exhibited from sunset to sunrise. The rock is submerged 10 feet at high water springs.
30	Mamoi Rock Beacon	On Mamoi Rock.	Pole with cage painted red	The rock is only covered at high water.
	WÊNCHOW.			
31	Elephant Rock Beacon.	On a small pinnacle rock called "Hsiang-shih" (Elephant Rock), about 600 feet S.E. of the east end of Pagoda Island (Ku-hsü, or, vulgarly, Kiang-sin-sze), which is in the middle of the river opposite the north wall of the city.	The beacon consists of an iron mast 3 inches in diameter, painted red, on which is fixed a bamboo basket 6 feet in diameter, painted red, with a white horizontal band round the centre.	The top of the mast is 15 feet above high water springs. The centre of the basket is 9 feet 6 inches above high water springs. The rock is submerged 8 feet at high water springs.
32, 33	1st Crossing or Lower Anchorage Beacons.	On the right bank of the Ou River, about 1¾ miles to the westward of the Lower Anchorage Station.	1. A pole, 36 feet high, surmounted by a bamboo frame 6 feet square. 2. A pole, 26 feet high, surmounted by a pyramidal bamboo frame 6 feet high. The whole painted black.	These beacons kept in line should indicate the best channel for crossing to the south-western point of Ch'i-tu-t'u (Big Island).
34, 35	2nd Crossing or Ch'i-tu-t'u Beacons.	† On the western end of Ch'i-tu-t'u (Big Island).	1. A pole, 36 feet high, surmounted by a bamboo frame 6 feet square. 2. A pole, 26 feet high, surmounted by a pyramidal bamboo frame 6 feet high. The whole painted red.	These beacons kept in line should indicate the best channel between Ch'i-tu-t'u and Yang-fu-shan-t'u.

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* The Oriental Rock Beacon was re-erected precisely similar to the old beacon, 20th Oct. 1885.

† The name of one island in the Ou River is incorrectly given in the British Admiralty Chart No. 1,763, latest edition: Yang-fu-shan-t'u or Ch'i-tu Island should be Yang-fu-shan-t'u.

BEACONS—*Continued.*

No.	Name of District and Name of Mark.	Position.	Description.	Remarks.
36, 37	3rd Crossing or Yang-fu-shan-t'u Beacons.	* On the N.E. end of Yang-fu-shan-t'u.	1. A pole, 36 feet high, surmounted by a bamboo frame 6 feet square. 2. A pole, 26 feet high, surmounted by a pyramidal bamboo frame 6 feet high. The whole painted black.	These beacons kept in line should indicate the best channel between Yang-fu-shan-t'u and the left (northern) bank of the river.
38, 39	4th Crossing or Chiang-t'o Beacons.	On the left bank of the river, a short distance to the eastward of Chiang-t'o.	1. A pole, 36 feet high, surmounted by a bamboo frame 6 feet square. 2. A pole, 26 feet high, surmounted by a pyramidal bamboo frame 6 feet high. The whole painted red.	These beacons kept in line should indicate the best channel between the northern bank of the river and the city.
	Ningpo.			
40	Alligator Beacon.....	On Alligator Point, a ledge of rocks extending 2 cables south from the extreme southern end of Kintang Island.	Stone beacon, painted red......	Long-nose Point bears N. 56¼° W.; Just-in-the-way bears S. 87° E.
41	Blonde Rock Beacon	Blonde Rock, in the Kintang Channel.	Iron beacon, with cage, painted black.	Sanshan Islet bears S. 42° E.; Square Island, N. 65° W.; Beacon Hill in one with the citadel, S. 45° W. Rock awash at low water.
42	Tiger's Tail Beacon...	On a rock bearing N. 43° W. from the tower on Tiger Island; distance 210 yards.	Iron beacon, painted black, with a white cage.	Rock awash at half tide.
43	Nemesis Rock Beacon.	On a ledge of rocks extending from the N.E. point of Tayew Island.	Hard-wood spar, painted red, with an inverted frustum cage, painted white.	Erected by Chinese, but maintained by the Customs.
	Shanghai.			
44	Kiutoan Beacon.....	South side of entrance to the River Yangtze.	Round black tower, 70 feet high.	Formerly a light was exhibited from this tower, but it was discontinued in April 1878, when the *Kiutoan* Light-ship (Light No. 33 of this publication) was first placed in position. The beacon is 4 cables from the shore, and of little use as a guide to a stranger.
45, 46	Woosung Inner-Bar Marks.	On the right bank of the Woosung River.	1. A low pole with a pyramidal top. 2. A high pole with a rectangular top.	These poles kept in line lead across the bar in the depth of water which is signalled from the Customs station during daylight. A *red low* light on the river's bank and a *white high* light on one of the poles indicate the same channel by night.
	Kiukiang.			
47	Lay Island Beacon...	On the island, about 2 miles from the upper (west) end.	A spar beacon, 45 feet above high water, surmounted by a black ball, and painted black and white.	It marks the channel in crossing over from the south to the north bank during the low state of the river in winter.

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* The name of one island in the Ou River is incorrectly given in the British Admiralty Chart No. 1,763, latest edition: Yang-fu-shan-t'u or Ch'i-tu Island should be Yang-fu-shan-t'u.

BEACONS—*Continued.*

No.	Name of District and Name of Mark.	Position.	Description.	Remarks.
	CHEFOO.			
48	Fairway Rock Beacon.	On the Fairway Rock, off the N.W. point of Yentai Hill.	An iron rod surmounted by a cage.	Rock dries at low water spring tides. Chefoo Peak, N. 4° W.; Sentry Rock, N. 38° E.; Chefoo Lighthouse, N. 85° E.
	TIENTSIN.			
49	Wooden Beacon.....	On the north bank, at the mouth of the Peiho.	Pyramid shape, painted white.	
50, 51	North Bank Marks	On the north bank, at the mouth of the Peiho.	Two poles, 30 feet high, with cages.	
52, 53	South Bank Marks	On the south bank, near the mouth of the Peiho.	Two poles, 30 feet high, with cages.	
54	South Bank Mark	On the south bank, near the C. M. S. N. Co.'s godown.	A board painted one half black, one half white, erected on two poles 20 feet high.	It marks the channel after rounding the No. 3 or Inner Buoy.
	NEWCHWANG.			
55	East Spit Beacon*	On the East Spit, a shoal extending south-westerly from the dry bank of the river.	Red spar, mounted with two red balls; 25 feet above high water.	It marks the western edge of East Spit, on the starboard side of channel. The Whale's Back Shoal, on the opposite side of the fairway, bears about S.W. by W. ½ W. from this beacon.
56	Nodding Tommy Beacon.*	On the east bank of the river, and one mile above East Spit Beacon.	Red spar, mounted with a red diamond-shaped box, which has a white band 1 foot wide painted round the middle of it. The spar is 25 feet above high water.	It marks the east bank of the river.
57	Middle Bank Beacon.*	On the east bank of the river, about 2¼ miles above Nodding Tommy Beacon.	Red spar, mounted with a red spherical cage, 25 feet above high water.	Middle Bank Shoal, on the opposite side of the channel, bears about S.W. by W. ¾ W. from this beacon.
58	Flagstaff Beacon....	On dry ground on the east bank of the river, and 7 cables N.E. from Middle Bank Beacon.	Spar, 50 feet high, mounted with two diamond-shaped boxes. The spar is painted red from the ground to the bottom of lower box, white from thence to the bottom of upper mark, and the remainder red.	
59	Fish House Beacon	On the west bank of the river, near high water mark, and a short distance from the bend that leads to the harbour.	Black spar, 40 feet high, mounted with a black diamond-shaped box.	It marks the channel in crossing over from the east to the west bank of the river.

* These three beacons are removed every year, in the latter part of November, on account of ice in the river, and replaced as soon as practicable on the opening of navigation.

A. M. BISBEE,
Coast Inspector.

By Order of the INSPECTOR GENERAL,

E. B. DREW,
Statistical Secretary.

Inspectorate General of Customs,
Statistical Department,
Shanghai, *January* 1886.

APPENDIX I.

LIST OF FOREIGN LIGHTS STAFF.

No.	NAME.	Rank.	Date of first Appointment.		District or Section.
	LIGHT-VESSELS.				
1	R. T. Crighton	Captain	June	1866	On leave.
2	W. W. Orfeur	„	March	1880	Newchwang.
3	E. Osborn	„	July	„	Shanghai.
4	P. N. Paulsen	First Mate*	March	1882	Shanghai.
5	P. W. Rasmussen	„ „	October	1883	Newchwang.
6	R. L. Sacks [*on probation*]	„ „	July	1885	Tientsin.
7	K. Webster	„ „	August	„	Shanghai.
8	G. Deitz	Second Mate	March	1877	Newchwang.
	LIGHTHOUSES.				
	LIGHTKEEPERS.				
9	C. G. Amy	Chief, *A*	October	1859	Chefoo.
10	J. Martin	„ „	March	1880	Amoy.
11	G. Taylor	„ „	June	1877	On leave.
12	J. Noble	„ „	„	„	Amoy.
13	J. Harp	Chief, *B*	June	1877	Chefoo.
14	N. Smerdeley	„ „	March	1869	Shanghai.
15	G. W. Hayden	„ „	November	1872	„
16	C. M. Peterson	„ „	July	„	On leave.
17	F. M. Coffin	Second, *A*	October	1871	Shanghai.
18	J. Eccles	„ „	June	1877	Chefoo.
19	T. Cunningham	„ „	„	„	Shanghai.
20	C. W. Bond	„ „	„	„	„
21	D. Wisas	„ „	September	1875	Chefoo.
22	D. Botelho	„ „	December	1861	Amoy.
23	P. F. S. Wilnau	„ „	November	1879	„
24	P. J. J. Stellingwerff	„ „	February	1877	„

* Acting Captain.

APPENDIX I—*Continued.*

No.	NAME.	Rank.	Date of first Appointment.	District or Section.
25	L. Antonio	Second, *B*	April 1871	Shanghai.
26	A. Michel	„ „	December 1874	Chefoo.
27	B. Lewis	„ „	June 1877	„
28	C. May	„ „	July 1880	Amoy.
29	G. E. von Pein	„ „	April 1881	„
30	W. Knight	Third, *A*	February 1878	Tientsin.
31	F. X. Meira	„ „	October 1880	Amoy.
32	C. G. Soelberg	„ „	April 1881	„
33	J. H. Hammeran	„ „	„ „	Newchwang.
34	J. Shields	„ „	August „	Amoy.
35	A. F. C. Penzig	Third, *B*	May 1882	Shanghai.
36	J. C. Hills	„ „	January 1883	Chefoo.
37	J. H. A. Schaaf	„ „	February „	Amoy.
38	C. A. Osterholm	„ „	September 1882	„
39	H. Johnson	„ „	June 1883	Shanghai.
40	J. Chapman	„ „	„ 1878	Amoy.
41	J. S. de Elizaga	„ „	December „	„
42	D. Fernandez	„ „	June „	„
43	E. E. Ferrari	„ „	April 1884	„
44	R. F. Livingston	„ „	May „	Shanghai.
45	W. Martinson	„ „	July „	„
46	L. J. A. de Luz	„ „	January 1878	„
47	J. M. Colasso	„ „	„ „	„
48	L. H. C. Klÿhn [*on probation*]	„ „	„ 1885	Amoy.
49	A. J. W. Hultmark	„ „	February „	Shanghai.
50	J. Bluhm	„ „	March „	„
51	P. E. Johnsen	„ „	„ „	„
52	H. A. Atkinson [*on probation*]	„ „	August „	Amoy.
53	F. H. Lucasson [*on probation*]	„ „	„ „	„
54	W. Wiles [*on probation*]	„ „	„ „	Shanghai.
55	A. Theege [*on probation*]	„ „	September „	„
56	J. Rodrigues	Fourth, *A*	August 1877	Shanghai.
57	A. M. dos Santos	Fourth, *B*	March 1882	Amoy.
58	R. M. Brandt	„ „	October 1885	„

APPENDIX II.

LIST OF CHINESE LIGHTS STAFF.

No.	Name.		Rank.	Date of first Appointment.	District or Section.
	In English.	In Chinese.			
	LIGHTKEEPERS.				
1	Su Chiang	蘇　江	Fourth, *C*	March 1878	Canton.
2	Liang Kuang	梁　光	„ „	April 1880	„
3	Ho Kao	何　高	„ „	September 1882	„
4	Lao Shih-wu	勞十五	„ „	October 1881	„
5	Ch'ên Chin	陳　金	„ „	November „	„
6	Lao Tê	勞　德	„ „	October „	„
7	Liang Yu-chin	梁有進	„ „	December 1883	„
8	Yang Sung	楊　松	„ „	March 1884	„
9	Ch'ên Kuan-hsiung	陳觀雄	„ „	September 1879	Amoy.
10	Hu I-t'ien	胡衣田	„ „	April 1880	„
11	Lin Chiang-chiang	林江江	„ „	„ 1876	„
12	Hsü Hsi-mei (No. 1)	許細妹	„ „	July 1874	„
13	Hsü Hsi-mei (No. 2)	許細妹	„ „	December 1879	„
14	Nien A-pa	念阿拔	„ „	February 1880	„
15	Chêng A-tê	鄭阿得	„ „	November 1876	„
16	Lin Ch'iu	林　求	„ „	September 1871	„
17	Hung Hua	洪　華	„ „	December 1880	„
18	Chi Hsiang	紀　响	„ „	May 1881	„
19	Tz'ŭ Chieh	慈　傑	„ „	February 1865	„
20	Li Chi	李　吉	„ „	May 1862	„
21	Li Tun	李　盾	„ „	November 1878	„
22	Li Hsün	李　蟳	„ „	April 1883	„
23	Huang Chên	黃　振	„ „	November 1871	„

APPENDIX II—*Continued.*

No.	Name.		Rank.	Date of first Appointment.		District or Section.
	In English.	In Chinese.				
24	Li Lai	李　來	Fourth, *C*	September	1877	Amoy.
25	Ts'ai Tz'ŭ-ch'ing	蔡賜輕	„ „	October	1880	„
26	Ch'ên Jih	陳　日	„ „	September	1878	„
27	Hsü T'ou	許　頭	„ „	March	1881	„
28	Wu A-chih	吳阿治	„ „	August	1880	„
29	Li Ju	李　如	„ „	April	1881	„
30	Wu Ch'ang-chou	吳長州	„ „	December	„	„
31	Chu Hsün-mei	朱巡梅	„ „	March	1884	„
32	Chuang K'un	莊　坤	„ „	November	„	„
33	Hung A-pa	洪阿捌	„ „	April	1883	„
34	Hsü A-chiang	徐阿江	„ „	„	1881	„
35	Hsü A-t'ai	許阿泰	„ „	March	1883	„
36	Lin Yu-lai	林有來	„ „	May	1882	„
37	Lin A-chu	林阿猪	„ „	February	„	„
38	Chao Ch'un-piao	趙春標	„ „	June	„	„
39	Kuo Chung	郭　忠	„ „	„	„	„
40	Li Tê	李　得	„ „	„	1883	„
41	Li Tan	李　旦	„ „	December	1880	Takow.
42	Ts'ai En	蔡　恩	„ „	June	1884	„
43	Ch'ên Ch'ang-yung	陳昌榮	„ „	April	1864	Ningpo.
44	Ku A-hsiao	顧阿小	„ „	November	1873	„
45	Wu Ping-chiang	鄔炳江	„ „	January	1875	„
46	Ku Chi-chang	顧寄章	„ „	September	1877	„
47	Ch'ên A-ao	陳阿鰲	„ „	July	1875	„
48	Wang Chung-huai	王中懷	„ „	August	1879	„
49	Chou A-shao	周阿少	„ „	—	1863	„
50	Ting A-t'ang	丁阿堂	„ „	August	1870	Shanghai.
51	Yao Ting-kuei	姚定貴	„ „	April	1880	„
52	Ling Hsiao-fang	陵小芳	„ „	June	1869	„

APPENDIX II—*Continued.*

No.	Name.		Rank.	Date of first Appointment.	District or Section.
	In English.	In Chinese.			
53	Yang Shun-chung	楊順忠	Fourth, *C*	May 1873	Shanghai.
54	Liu Hsien-kao	劉賢高	,, ,, ...	October 1877	,,
55	P'an Lung-ch'üan	潘龍泉	,, ,, ...	April 1878	,,
56	Yang Jui-chi	楊瑞吉	,, ,, ...	August 1883	,,
57	Tung Chin-ts'ai	董金財	,, ,, ...	April ,,	,,
58	Su A-pao..................................	蘇阿寶	,, ,, ...	December 1879	,,
59	Lin A-san.................................	林阿三	,, ,, ...	June 1883	,,
60	Fu Chih-shou	傅志壽	,, ,, ...	February 1877	,,
61	Lo Ssŭ-yo.................................	羅四岳	,, ,, ...	July 1883	,,
62	Liu Hêng-ch'in...........................	劉恒欽	,, ,, ...	January 1875	,,
63	Shên Ta-shêng...........................	沈大生	,, ,, ...	July 1883	,,
64	Liu Hsiao-fêng	劉小峯	,, ,, ...	November 1879	,,
65	A-ming.....................................	阿明	,, ,, ...	August 1883	,,
66	Sung A-hsiao	宋阿小	,, ,, ...	July 1876	,,
67	Yen A-san	嚴阿三	,, ,, ...	September 1878	,,
68	Chao Kuei-yün...........................	趙貴云	,, ,, ...	January 1883	,,
69	Hung Wan-i...............................	洪萬億	,, ,, ...	February 1866	Chinkiang.
70	Chang Sung	張松	,, ,, ...	June 1876	,,
71	Lu Hêng-i.................................	陸恒義	,, ,, ...	December 1870	,,
72	Hsü Hung..................................	徐洪	,, ,, ...	July 1878	,,
73	Ts'ui Tê-jung.............................	崔得榮	,, ,, ...	August 1867	,,
74	Ts'ui Hêng-fa	崔恒發	,, ,, ...	November 1881	,,
75	Shao Mei-ts'ai	邵美才	,, ,, ...	,, 1877	,,
76	Wang T'ien-ts'ai	王天才	,, ,, ...	February 1873	,,
77	Wang Fu-ch'üan	王福泉	,, ,, ...	January 1880	,,
78	Liu Shao-yu	劉少友	,, ,, ...	August 1884	,,
79	Ts'ai Shih-piao...........................	蔡世標	,, ,, ...	January 1868	,,
80	Ma Yü-fa	馬裕發	,, ,, ...	August 1884	,,
81	Huang Tê-jung...........................	黃德榮	,, ,, ...	March 1869	,,

APPENDIX II—*Continued.*

No.	Name.		Rank.	Date of first Appointment.	District or Section.
	In English.	In Chinese.			
82	Huang Shou-lan	黃壽蘭	Fourth, *C*	July 1881	Chinkiang.
83	Ts'ui Tê-fu	崔德福	„ „	April 1873	„
84	Ku Yung-lin	顧永林	„ ,	June 1885	„
85	Ch'ên Yu-i	陳有義	„ ,	April 1875	„
86	Yü Tê-shui	虞德水	„ „	August 1884	„
87	Hsü Yung-shêng	徐永生	„ „	April 1881	„
88	Pu Liu-yüan	卜流源	„ „	July 1878	„
89	Chang Tê-yü	張得餘	„ „	June 1864	„
90	Pi K'ai-lan	畢開闌	„ „	„ „	„
91	Ts'ai Tsêng-fa	蔡增發	„ „	December 1873	Kiukiang.
92	Hsing Chung-ping	邢忠炳	„ „	May 1885	„
93	Wang Ch'üan-fu	王全福	„ „	„ „	„
94	Ch'i Ch'un-jung	齊春榮	„ „	„ 1872	„
95	Wan Ting-huan	萬鼎歡	„ „	November 1884	„
96	Wang Wu-shang	王伍尙	„ „	„ „	„
97	Chang Ming-shu	張明樹	„ „	„ „	„
98	Hsü Tê-pao	徐德保	„ „	June 1870	„
99	K'o Ming-i	柯明義	„ „	March 1885	„
100	Chung Hsien-ts'ai	鍾賢才	„ „	April 1873	„
101	Wu Hsiao-lin	吳學林	„ „	„ 1885	„
102	Ch'ên Ju-kuei	陳如貴	„ „	July 1870	„
103	Chao Pao-ho	趙保和	„ „	November 1885	„
104	Chang Hsin-i	張新益	„ „	March „	„
105	Wan Ch'i-yin	萬啟銀	„ „	„ „	„
106	Liao Tê	廖 德	„ „	April „	„
107	T'ao Hsien-chih	陶顯直	„ „	November „	„
108	Chang Hsin-hung	張新洪	„ „	December 1884	„
109	K'ung Hsien-i	孔憲義	„ „	January 1877	„
110	Chao Ta-chiu	趙達九	„ „	June 1870	„

APPENDIX II—*Continued.*

No.	Name.		Rank.	Date of first Appointment.	District or Section.
	In English.	In Chinese.			
111	Li Cho-lün	李著倫	Fourth, *C*	May 1885	Kiukiang.
112	Chang Su-k'un	張述坤	„ „	October 1872	„
113	Wu Pên-hsin	吳本信	„ „	June 1885	„
114	Wan Ting-hsien	萬鼎先	„ „	April 1872	„
115	Wan Yü-hai	萬裕海	„ „	March 1885	„
116	Kuei Ch'un-ying	桂春迎	„ „	June 1876	„
117	T'ien Fang-chin	田方金	„ „	July 1876	Hankow.
118	Ch'ên T'ai-ao	陳太鰲	„ „	September 1877	„
119	Liu Chung-lin	劉忠林	„ „	April 1862	„
120	Liu Hsio-ch'ing	劉學慶	„ „	February 1879	„
121	Shih Hsing-wan	施興萬	„ „	January 1869	„
122	Kao Hsing-ch'i	高興起	„ „	December 1882	„
123	Liu Pi-ch'ang	劉必昌	„ „	July 1869	„
124	Li Hsi-yüan	李喜元	„ „	„ 1883	„
125	Chang Hsio-shih	張學詩	„ „	April 1879	„
126	Liu Chêng-ch'ien	劉正乾	„ „	„ „	„
127	Li Tun-chien	李敦鑑	„ „	January 1882	„
128	Kung Tso-ying	龔作英	„ „	„ „	„
129	Chang Lao-yao	張老幺	„ „	December 1873	„
130	Sung Yü-chün	宋禹俊	„ „	November 1874	„
131	Chang Nien-pao	張年寶	„ „	October 1871	„
132	Shih Kuang-ts'ai	施光彩	„ „	August 1884	„
133	Kuo Yu-kuei	郭友貴	„ „	April 1872	„
134	Huo Yü-ch'ing	霍裕慶	„ „	November 1884	„
135	Ch'ü Hsiang-t'ien	曲香田	„ „	March 1879	Chefoo.
136	Chi Ming-shui	紀明水	„ „	January 1882	„
137	Jên Ch'üan-kuei	任全桂	„ „	April 1866	„
138	Chang Hung-chü	張洪舉	„ „	November „	„
139	Chiang Wan-nien	江萬年	„ „	January 1877	„

APPENDIX II—*Continued.*

No.	NAME.		Rank.	Date of first Appointment.	District or Section.
	In English.	In Chinese.			
140	Ch'ü Shu-t'ien	曲書田	Fourth, *C*	August 1882	Chefoo.
141	Wang A-to*	王阿多	„ „	June 1884	„
142	Lu A-hsiao*	陸阿小	„ „	May 1885	„
143	Ting Wên-yüan	丁文元	„ „	May 1871	„
144	Ch'ih Ch'ing-ling	遲慶令	„ „	August 1879	„

* Engineer Lightkeeper.

APPENDIX III.

MEMORANDUM ON THE TIDES AT THE SOUTHERN ENTRANCE TO THE YANGTZE AND ON THE WOOSUNG INNER BAR.

I.

THE following information regarding the Tides in the vicinity of the *Tungsha* Lightship is derived from observations taken by the master of that vessel, and extending over a period of five months, from 1st May to 30th September.

It is high water, full and change, at the *Tungsha* Lightship at $12^{h.}$ The extreme spring rise is 16 feet, and the greatest range observed between two consecutive tides was 14 feet. Neaps rise 11 feet, and their average range is 8 feet. The smallest range observed between two consecutive tides was 6 feet. The tides at the entrance to the Yangtze are rotatory; but, as shown by the following table, the set of the stream for any particular hour of the tide, except the last quarter of the flood or ebb, varies greatly, and this without any peculiar circumstances of wind or weather being apparent.

TABLE showing the DIRECTION and VELOCITY of the TIDAL STREAM at the "TUNGSHA" LIGHTSHIP.

TIME OF TIDE.	SPRING TIDES, DIRECTION OF STREAM.	AVERAGE VELOCITY.	NEAP TIDES, DIRECTION OF STREAM.	AVERAGE VELOCITY.
		Knots.		*Knots.*
At high water	N.W. by W. to N.W. by N.	$1\frac{5}{10}$	W.N.W. to N.W. by N.	1
1st hour ebb	N.N.W. to N.E.	$\frac{9}{10}$	N.W. to N. by E.	$\frac{9}{10}$
2nd " "	N.E. to E. by S.	$1\frac{3}{10}$	N. to E.	1
3rd " "	E. by N. to E.S.E.	$2\frac{2}{10}$	N.E. to E.S.E.	1
4th " "	E.S.E. to S.E.	$2\frac{8}{10}$	E. to S.E. by E.	$1\frac{7}{10}$
5th " "	S.E. by E. to S.E.	$3\frac{6}{10}$	E.S.E. to S.E.	$2\frac{2}{10}$
6th " "	S.E.	$3\frac{2}{10}$	S.E. by E. to S.E.	$2\frac{2}{10}$
At low water	S.E.	$2\frac{5}{10}$	S.E. to S.S.E.	$1\frac{7}{10}$
1st hour flood	S.E. to S.W.	$1\frac{5}{10}$	S.E. by S. to S.W.	$1\frac{2}{10}$
2nd " "	S.W. to W.N.W.	$1\frac{5}{10}$	S. to W. by S.	$1\frac{3}{10}$
3rd " "	W.N.W. to N.W. by W.	$2\frac{1}{10}$	W.S.W. to W.N.W.	$1\frac{5}{10}$
4th " "	W.N.W. to N.W.	2	W.N.W. to N.W.	$1\frac{3}{10}$
5th " "	N.W. by W. to N.W.	$1\frac{6}{10}$		

The ebb runs strongest during the fifth and sixth hours. The greatest velocity noted during springs was 5 knots, and during neaps 3¼ knots. The flood runs strongest during the third and fourth hours. The greatest velocity noted during springs was 3 knots, and during neaps 2 knots. Between the *Tungsha* Lightship and Woosung the tides are considerably stronger in the navigable channel, owing to the water being confined within narrower limits by the banks. With the wind fresh from the southward, the ebb tide in the vicinity of the *Tungsha* Lightship, and for a considerable distance farther to the eastward, sets to the northward of east much longer than under other circumstances; but with a fresh northerly wind, the opposite of this is the case. The tide falls, on an average, for seven hours during both springs and neaps, and rises for five hours.

2.

The following information regarding the tides at Woosung is mostly derived from the records of the Harbour Master's Office at that place, for the five years ended 31st December 1883:—

The average time of high water, full and change, on the Woosung Inner Bar is $0^{h.}\ 40^{m.}$ Under ordinary circumstances, the average daily difference in the time of high water at Woosung is as follows:—For the first 7 days after new moon, $40^{m.}$, increasing to $50^{m.}$ on the 8th day and $1^{h.}\ 40^{m.}$ on the 10th, then decreasing to $50^{m.}$ on the 12th and $40^{m.}$ from the 12th to the 22nd, again increasing to $1^{h.}\ 40^{m.}$ on the 24th, and then diminishing to about $20^{m.}$ on the day before new moon. The greatest irregularity in the daily difference occurs on the first, second, and third days after the moon's quartering; and it has been known, under exceptional circumstances of weather, to be nearly four hours.

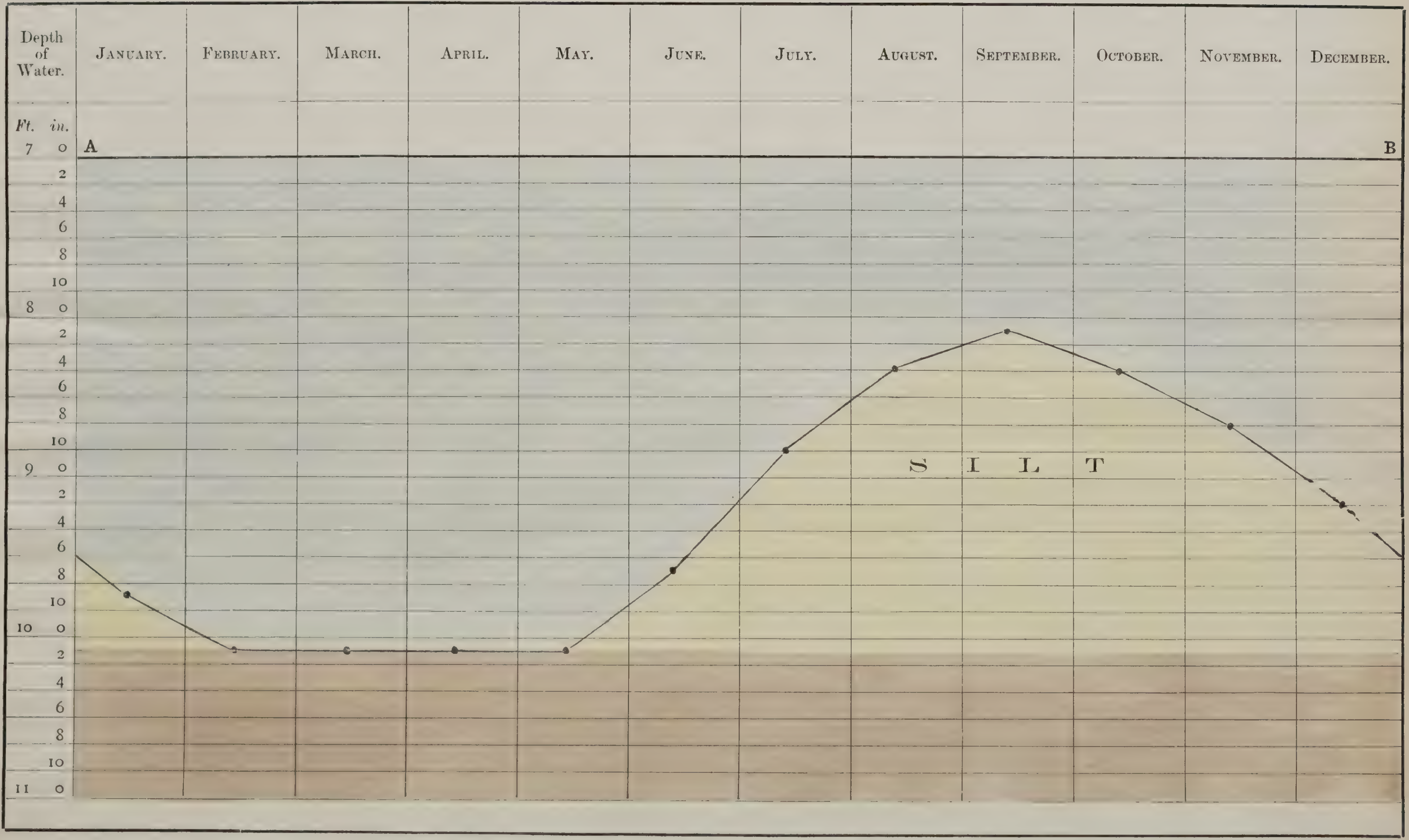
The tides are much influenced by the wind; the flood making sooner, rising higher, and running longer than usual with the wind fresh between N.E. and E., whilst with the wind strong from N. to N.W. and W. the opposite is the case in each of these respects, the ebb running longer and the water falling lower.

No fixed rule can be laid down regarding the day of the moon on which the highest or lowest tide may be expected. The highest tide often occurs on the third day after full and change, but it frequently happens on the second day after; more rarely on the first, and occasionally on the day of full or change. A similar irregularity is apparent as regards the extreme neap tides (*i.e.*, those which give the least depth at high water) with reference to the time of the moon's quartering.

The Woosung Inner Bar silts up during certain months of the year, and cuts away during others, with considerable regularity, as the following table will show, the depths given being reckoned from an established level of low water at lowest spring tides.

DIAGRAM No. 1.

DIAGRAM (illustrating TABLE A.) showing the PERIODICAL MOVEMENT of SILT, and the AVERAGE DEPTH of WATER on the WOOSUNG INNER BAR (at LOW WATER SPRING TIDES) during each Month of the Year.



A B represents a level 7 feet below the level of low water at lowest spring tides.

TABLE A.

DEPTH of WATER on WOOSUNG INNER BAR at LOW WATER SPRING TIDES for Five Years ending 31st December 1883.

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	Ft. in.	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*	*Ft. in.*
1879.........	9 6 to 10 0	10 0 to 10 6	10 6	10 6 to 11 0 11 0 to 10 6	10 6 to 10 0	10 0 to 9 0	9 0 to 8 6	8 6 to 7 6	7 6 to 7 0	7 0 to 8 5	8 5	8 6 to 9 0
1880.........	9 0 to 9 6	9 6	9 6	9 6	9 6 to 9 0	9 0 to 8 0	8 0 to 7 6	7 6 to 7 0	7 0	7 0 to 7 6	7 6 to 8 0	8 0 to 8 6
1881.........	8 6	8 6	8 6	8 6 to 9 0	9 0 to 10 6	10 6 to 9 6	9 6 to 9 0	9 0 to 8 6	8 6 to 9 0	9 0 to 9 6	9 6	9 6 to 10 0
1882.........	10 0 to 10 6	10 6 to 11 0	11 0	11 0	11 0 to 10 6	10 6 to 9 6	9 6 to 9 0	9 0	9 0	9 0	9 0 to 9 6	9 6 to 10 0
1883.........	10 0 to 10 6	10 6	10 6 to 10 0 10 0 to 10 6	10 6 to 10 0 10 0 to 10 6	10 6	10 6 to 9 6	9 6	9 6 to 8 6	9 6	8 6 to 9 0	9 0	9 0 to 9 6
Average depths to nearest inch	9 9	10 1	10 1	10 1	10 1	9 7	8 10	8 4	8 1	8 4	8 8	9 2

Diagram No. 1 shows that the bar is generally at its lowest level during the months of February, March, April, and May, and that the deposit of silt causes it to rise from early in May until September, when it begins to cut away. It has been observed, however, that when much rain falls during the spring and summer in the region traversed by the Huangp'u, the velocity of the ebb tide is much increased, and there is a proportionately smaller deposit of silt on the bar, whilst the opposite is the case during what is considered a dry season.

The highest spring tides of the year usually occur in the month of August; the greatest and least depths at high water on the inner bar that have ever been recorded were respectively $25\frac{1}{12}$ feet and $13\frac{2}{1}$ feet.

The depth of water on the bar does not, as has already been shown, depend altogether on the rise of tide, and it is therefore difficult to lay down any general rule as to what depth may be expected at any particular time. The following table may, however, be accepted as a pretty correct guide in this respect:—

TABLE B.

Showing the AVERAGE DEPTHS of WATER at HIGH WATER on the WOOSUNG INNER BAR at the HIGHEST SPRING TIDES and at the LOWEST NEAP TIDES.

MONTH.	SPRING TIDES.								NEAP TIDES.							
	Full Moon.				New Moon.				First Quarter.				Last Quarter.			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
	Ft.	*in.*	*Ft.*	*in.*	*Ft.*	*in.*	*Ft.*	*in.*	*Ft.*	*in.*	*Ft.*	*in.*	*Ft.*	*in.*	*Ft.*	*in.*
January	17	11	19	8	18	4	20	2	16	6	15	6	16	4	15	11
February	19	0	20	1	19	4	20	5	17	1	15	3	17	3	15	9
March	19	8	19	6	19	11	20	0	17	2	15	1	17	4	15	8
April	20	7	19	9	20	7	20	0	17	6	15	9	17	9	16	0
May	21	7	19	10	21	7	19	6	17	6	17	3	18	6	17	5
June	21	7	19	5	21	1	19	4	17	2	17	5	17	4	17	9
July	21	9	19	10	20	9	19	4	16	3	17	9	16	6	17	9
August	22	1	20	7	21	5	19	10	15	3	17	5	14	5	16	11
September	20	6	20	2	20	3	19	10	15	0	17	4	14	8	16	8
October	19	3	20	5	19	6	20	5	15	7	17	4	15	1	15	1
November	18	3	19	7	18	4	20	0	16	1	17	5	15	7	16	5
December	18	2	19	6	18	3	20	2	15	11	15	10	15	10	15	11

DIAGRAM No. 2.

DIAGRAM (illustrating TABLE B.) showing the AVERAGE DEPTHS of WATER at HIGH WATER on the WOOSUNG INNER BAR at the HIGHEST SPRING TIDES.

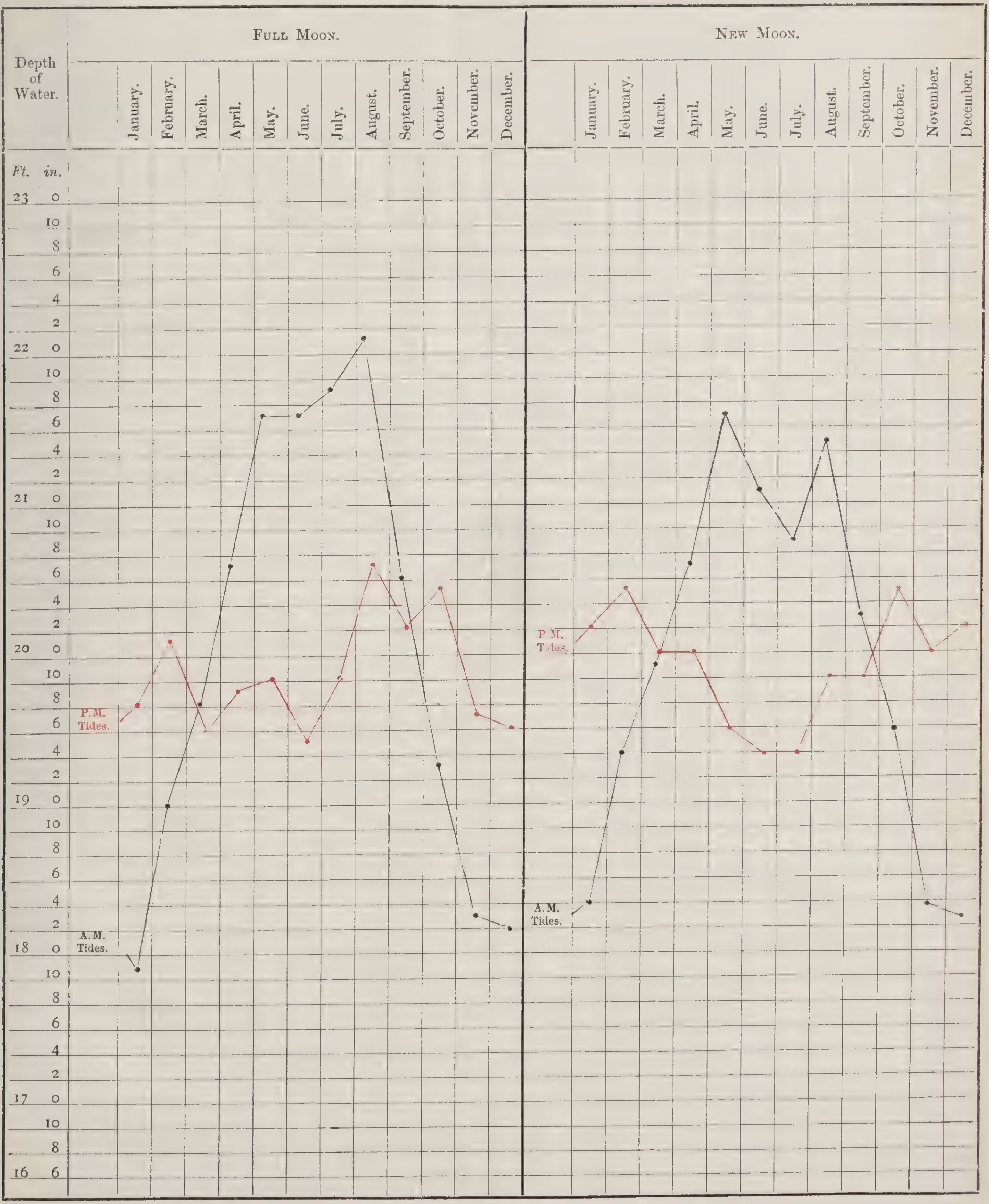


DIAGRAM No. 3.

DIAGRAM (illustrating TABLE B.) showing the AVERAGE DEPTHS of WATER at HIGH WATER on the WOOSUNG INNER BAR at the LOWEST NEAP TIDES.

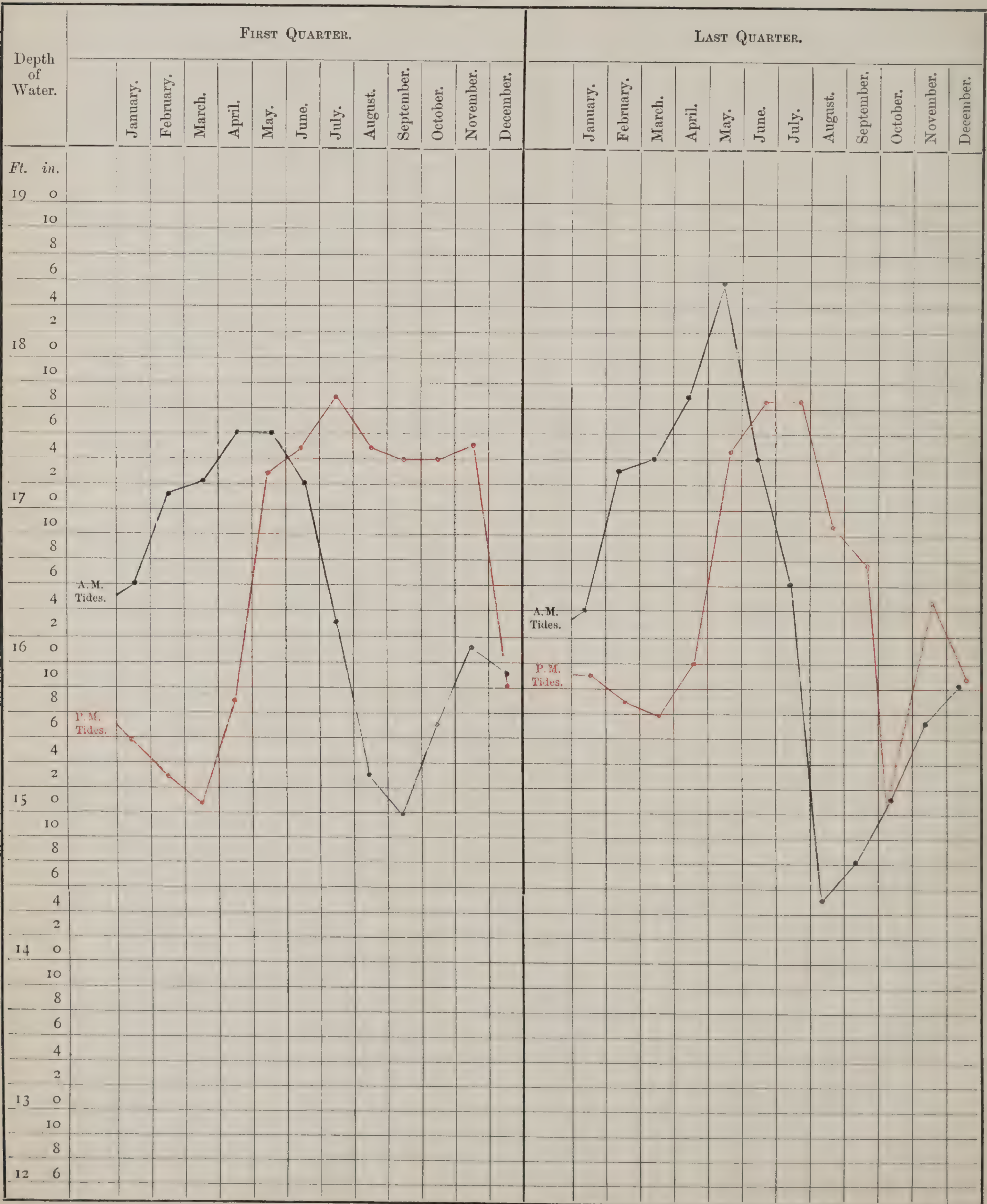


TABLE C.

Showing the MONTHS during which A.M. and P.M. TIDES are HIGHEST.

FULL MOON.		NEW MOON.	
A.M.	P.M.	A.M.	P.M.
March.	January.	April.	January.
April.	February.	May.	February.
May.	October.	June.	March.
June.	November.	July.	October.
July.	December.	August.	November.
August.		September.	December.
September.			

FIRST QUARTER.		LAST QUARTER.	
A.M.	P.M.	A.M.	P.M.
January.	June.	January.	June.
February.	July.	February.	July.
March.	August.	March.	August.
April.	September.	April.	September.
May.	October.	May.	A.M and P.M. Tides the same in October.
December.	November.		November.
			December.

TABLE D.

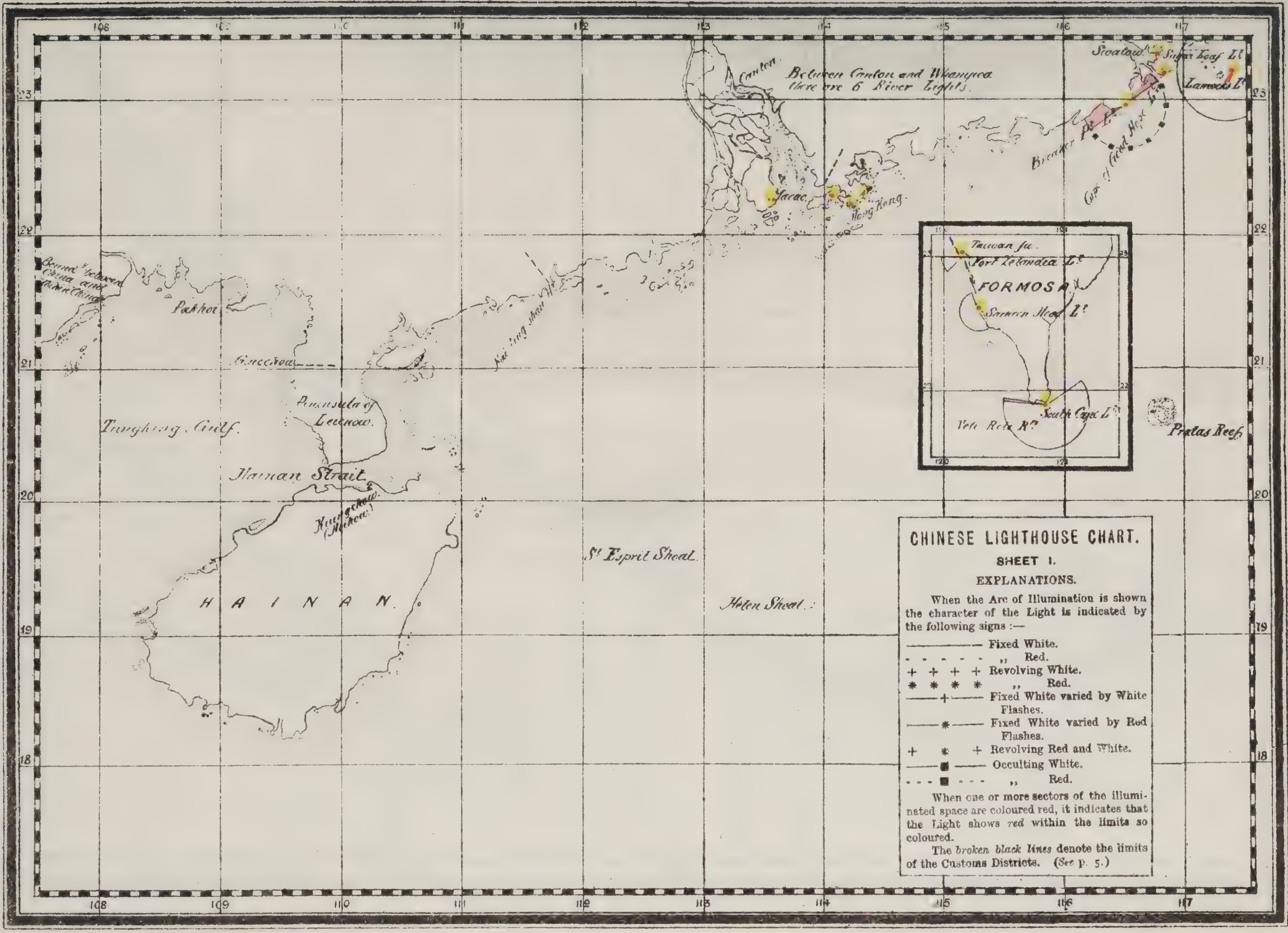
Showing the AVERAGE NUMBER of TIDES giving certain DEPTHS at HIGH WATER on the WOOSUNG INNER BAR, from 18 Feet and upwards, for each Month of the Year.

MONTH.	Tides of 18 Feet and upwards.	Tides of 19 Feet and upwards.	Tides of 20 Feet and upwards.	Tides of 21 Feet and upwards.	Tides of 22 Feet and upwards.	Tides of 23 Feet and upwards.
January	28	13	5	...	...	...
February	32	20	9	2	...	...
March	38	22	8	1	...	...
April	39	27	13	4	...	...
May	45	31	18	9	2	...
June	41	25	16	8	1	...
July	41	27	16	7	2	...
August	39	26	18	10	4	1
September	36	23	12	4	...	...
October	37	24	10	2	...	...
November	28	14	4	...	...	...
December	29	15	4	1	...	...
TOTAL	433	267	133	48	9	1

During spring tides the ebb begins to run at Woosung from 1½ hours to 2 hours after high water, and during neap tides from 1¾ hours to 2½ hours after high water. The flood commences to run during springs from 20 to 40 minutes after low water, and during neaps from 1 hour to 1½ hours after low water. The tides set up, and down, along both banks of the river respectively, before the flood or ebb begins to run in mid-channel. During springs the tide falls for about 8¼ hours, and rises about 4 hours; and during neaps it falls for about 7½ hours, and rises for 4¾ hours.

A. M. BISBEE,
Coast Inspector.

COAST INSPECTOR'S OFFICE,
SHANGHAI, *February* 1885.



CHINESE LIGHTHOUSE CHART.

SHEET 1.

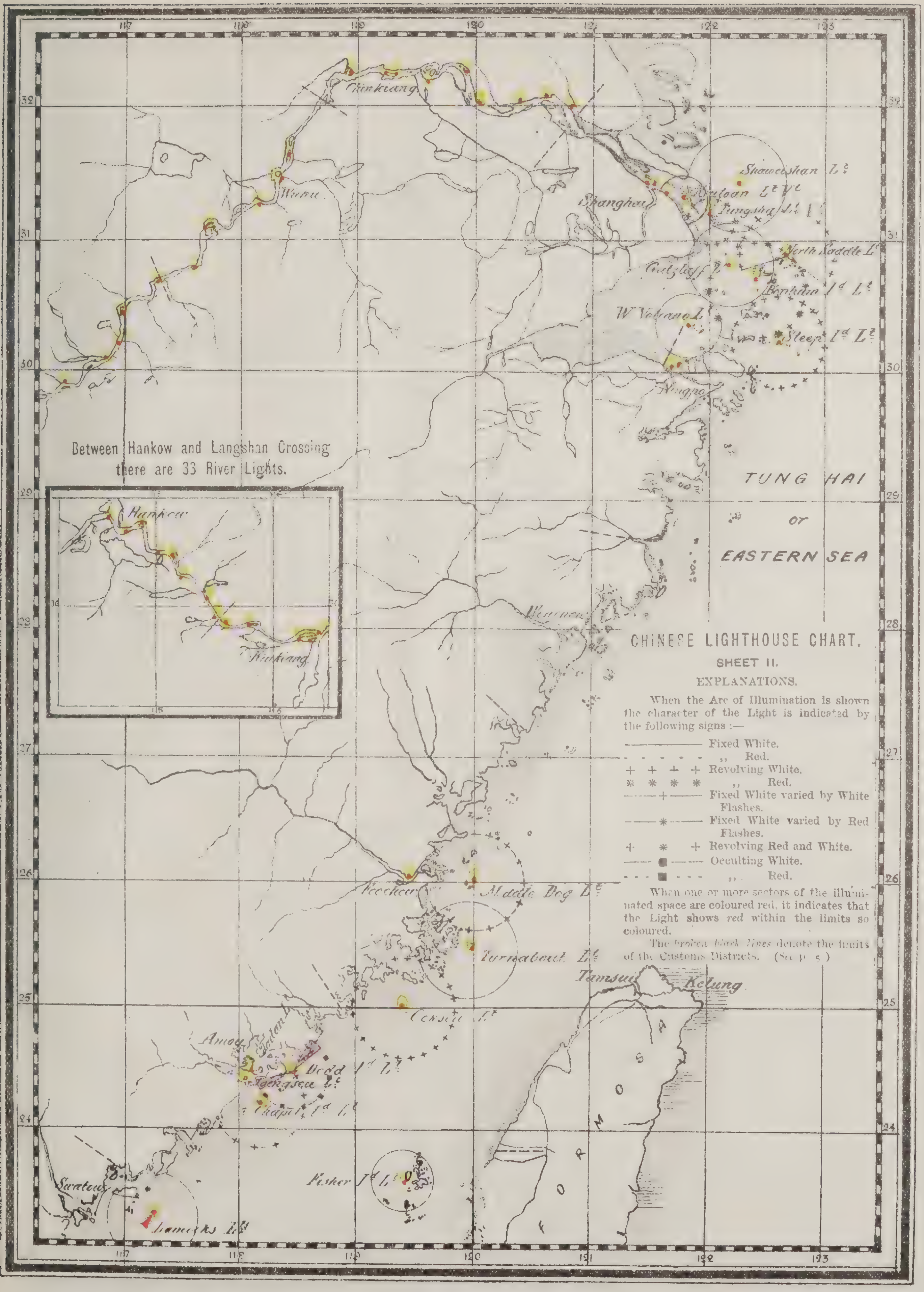
EXPLANATIONS.

When the Arc of Illumination is shown the character of the Light is indicated by the following signs:—

- ——————— Fixed White.
- - - - - - - ,, Red.
- + + + + Revolving White.
- ✱ ✱ ✱ ✱ ,, Red.
- ———+——— Fixed White varied by White Flashes.
- ———✱——— Fixed White varied by Red Flashes.
- + ✱ + Revolving Red and White.
- ———■——— Occulting White.
- - - - ■ - - - ,, Red.

When one or more sectors of the illuminated space are coloured red, it indicates that the Light shows *red* within the limits so coloured.

The *broken black lines* denote the limits of the Customs Districts. (*See* p. 5.)



Between Hankow and Langshan Crossing there are 33 River Lights.

CHINESE LIGHTHOUSE CHART.

SHEET II.

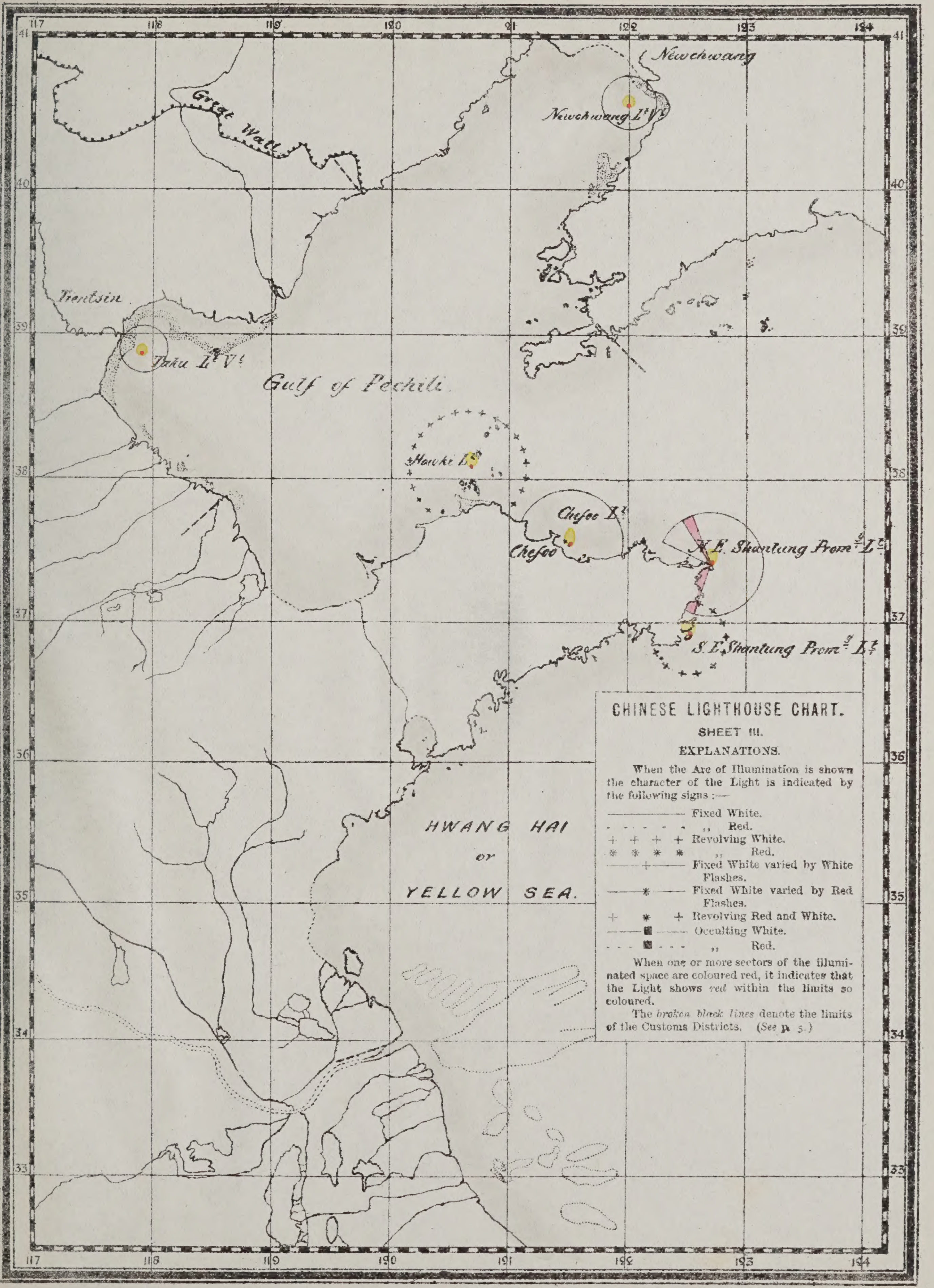
EXPLANATIONS.

When the Arc of Illumination is shown the character of the Light is indicated by the following signs :—

———————	Fixed White.
- - - - -	,, Red.
+ + + +	Revolving White.
✳ ✳ ✳ ✳	,, Red.
———+———	Fixed White varied by White Flashes.
———✳———	Fixed White varied by Red Flashes.
+ ✳ +	Revolving Red and White.
——— ■ ———	Occulting White.
- - - ■ - - -	,, Red.

When one or more sectors of the illuminated space are coloured red, it indicates that the Light shows *red* within the limits so coloured.

The *broken black lines* denote the limits of the Customs Districts. (See p. 5.)



CHINESE LIGHTHOUSE CHART.

SHEET III.

EXPLANATIONS.

When the Arc of Illumination is shown the character of the Light is indicated by the following signs :—

——————— Fixed White.
- - - - - - ,, Red.
+ + + + Revolving White.
✳ ✳ ✳ ✳ ,, Red.
——+—— Fixed White varied by White Flashes.
——✳—— Fixed White varied by Red Flashes.
+ ✳ + Revolving Red and White.
——■—— Occulting White.
- - - ■ - - - ,, Red.

When one or more sectors of the illuminated space are coloured red, it indicates that the Light shows *red* within the limits so coloured.

The *broken black lines* denote the limits of the Customs Districts. (*See* p. 5.)

III.—MISCELLANEOUS SERIES.

No. 1.—	The Tariff Tables	Published	1868.
,, 2.—	Ten Years' Statistics	,,	1873.
,, 3.—	Vienna Exhibition Catalogue	,,	1873.
,, 4.—	Philadelphia ,, ,,	,,	1876.
,, 5.—	Paris ,, ,,	,,	1878.
,, 6.—	List of Chinese Lighthouses, etc.: Fourteenth Issue (First Issue, 1872)	,,	1886.
,, 7.—	List of Chinese Lighthouses, etc.: Chinese Version of the Fourteenth Issue (First Issue, 1877)	,,	1886.
,, 8.—	General Tariff List	,,	1879.
,, 9.—	Berlin Fishery Exhibition Catalogue	,,	1880.
,, 10.—	Names of Places on the China Coast and the Yangtze River: First Issue	,,	1882.
,, 11.—	London Fisheries Exhibition Catalogue	,,	1883.
,, 12.—	Rules regarding Notarial Acts to be performed by Commissioners of Customs, and Forms of Protest: Second Issue (First Issue, 1882: Circular No. 187)	,,	1883.
,, 13.—	London Health Exhibition Catalogue	,,	1884.
,, 14.—	New Orleans Exposition Catalogue	,,	1884.
,, 15.—	English-Chinese Glossary of Technical ("Lights," etc.) Expressions: First Issue	,,	1885.